

DOCUMENT RESUME

ED 177 316

CE 022 752

AUTHOR Steiger, JoAnn; And Others
 TITLE Literature and Seccondary Data Review of the Vocational Education Equity Study. Final Report: Volume II.
 INSTITUTION Steiger, Fink, and Kosecoff, Inc., McLean, Va.
 SPONS AGENCY American Institutes for Research in the Behavioral Sciences, Palo Alto, Calif.; Office of Education (DHEW), Washington, D.C.
 REPORT NO AIR-66600-3/79FR(2)
 PUB DATE Mar 79
 CONTRACT 300-77-0318
 NOTE 261p.; Some of the tables in this document will not reproduce well due to small, broken type; For related documents see CE 022 751-755
 EDRS PRICE MF01/PC11 Plus Postage.
 DESCRIPTORS Data Collection; Educational History; federal Legislation; *Sex Discrimination; Sex Fairness; Sex Role; *Sex Stereotypes; *Vocational Education
 IDENTIFIERS Education Amendments 1976

ABSTRACT

This report provides a review of the literature and secondary data on sex discrimination and stereotyping in vocational education. Chapter 1 provides an executive summary of the findings of the review of secondary data. Chapter 2 presents findings, organized according to eighteen major topics used to guide the search for data. Some of the topics include the following: number of males and females with jobs in occupations for which vocational students are trained, male and female students' vocational competencies, and employers' satisfaction with male and female employees who graduated from vocational programs. Chapter 3 presents a review of the literature on sex role socialization. Review topics include some of the following: women in the labor force, sex fairness in education, and sex roles and career choice. Chapter 4 reviews the history of the sex fairness of the vocational education portion of the Education Amendments of 1976, presenting the specific language of relevant sections of the law and regulations. Finally, the bibliography for chapters 2 (by topic), 3, and 4 concludes the document. (JH)

 * Reproductions supplied by EDRS are the best that can be made *
 * from the original document. *

Final Report
Volume II

LITERATURE AND SECONDARY DATA REVIEW
OF THE
VOCATIONAL EDUCATION EQUITY STUDY

Prepared by:

Steiger, Fink, and Kosecoff, Inc.

Authors:

JoAnn Steiger
Arlene Fink
Jacqueline Kosecoff
Susan Martin
Joanne Primavera
Rose-Lise Obetz
Sue H. Schlesinger

Under Contract from:

American Institutes for Research

Edited by:

Charles W. Dayton

March 1979

Performed under U.S. Office of Education Contract No. 300-77-0318.
Points of view or opinions stated do not necessarily represent
USOE position or policy.

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRO-
DUCED EXACTLY AS RECEIVED FROM
THE PERSON OR ORGANIZATION ORIGIN-
ATING IT. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRESENT
OFFICIAL NATIONAL INSTITUTE OF
EDUCATION POSITION OR POLICY.

TABLE OF CONTENTS

INTRODUCTION	1
CHAPTER I: EXECUTIVE SUMMARY	3
CHAPTER II: SECONDARY DATA REVIEW	11
Notes on Methodology	13
Topic 1: Number of Males and Females with Jobs in Occupations for which Vocational Students are Trained	15
Topic 2: Wages of Males and Females with Jobs in Occupations for which Vocational Students are Trained	32
Topic 3: Participation in Vocational Education Classroom Training Programs	38
Topic 4: Male and Female Students in Cooperative Education Programs	53
Topic 5: Male and Female Attrition Rates from Vocational Education Programs	58
Topic 6: Male and Female Students' Vocational Competencies	60
Topic 7: Male and Female Vocational Graduates' Satisfaction with Careers	63
Topic 8: Male and Female Students' Career Plans and Vocational Educators' Influence on These	69
Topic 9: Students' (Male and Female) and Staffs' Satisfaction with Vocational Programs	80
Topic 10: Employers' Satisfaction with Male and Female Employees Who Graduated from Vocational Programs	87
Topic 11: Students, Staffs, and Employers' Opinions about Roles and Responsibilities of Men and Women in the Labor Force	89
Topic 12: Students, Graduates, and Employers' Attitudes Towards Sex Inequities	93

Topic 13:	Staff Awareness of Effective Methods for Reducing Sex Inequities	95
Topic 14:	Staffing Patterns in Vocational Education Programs	100
Topic 15:	Implementation of Title IX at the State Education Agency Level	106
Topic 16:	Implementation of Title IX at the Local Education Agency Level	108
Topic 17:	Implementation of Sex Fairness Provisions--State Education Agency Level	110
Topic 18:	Implementation of Sex Fairness Provisions--Local Education Agency Level	112
	Suggestions for Reanalysis of Existing Data	113
CHAPTER III:	REVIEW OF THE LITERATURE ON SEX ROLE SOCIALIZATION . .	119
	Introduction	121
	A. Women in the Labor Force	122
	B. Sex Role Socialization	132
	C. Sex Role Socialization and Sex Fairness in Education	141
	D. Sex Roles and Career Choice	155
	E. Critique of the Literature and Implications for Vocational Education	166
CHAPTER IV:	HISTORY OF LEGISLATIVE PROVISIONS TO ELIMINATE SEX BIAS, SEX DISCRIMINATION, AND SEX STEREO- TYPING IN VOCATIONAL EDUCATION	171
	Narrative Overview	173
	Public Law 94-482. The Educational Amendments of 1976. Title II - Vocational Education	189
REFERENCES AND BIBLIOGRAPHY		207

INTRODUCTION

The Education Amendments of 1976 contained major revisions to previous Federal vocational education legislation. Included for the first time were requirements that the States take affirmative steps to overcome sex discrimination, sex bias, and sex stereotyping in vocational education. Congress also specifically charged the Commissioner of Education with the task of conducting a study of the current extent of sex discrimination and sex stereotyping in vocational education programs and of the progress being made to overcome these problems. The American Institutes for Research (AIR) of Palo Alto, California was awarded the contract to conduct this study. Steiger, Fink, and Kosecoff, Inc. (SFK) and L. Miranda and Associates were subcontractors. The following document is the Literature and Secondary Data Review of that study.

The purpose of this document is to review and summarize what has been done to date in studying sex discrimination and stereotyping in vocational education, to avoid duplication in this study, and to build on current knowledge. It is an attempt to consolidate into one volume the current knowledge on this issue. The report contains several sections. Chapter I is an executive summary of the findings of the review of secondary data. Chapter II presents the findings in detail, organized according to the 18 major topics used to guide the search for data. Chapter III presents a review of the literature on sex role socialization. Chapter IV reviews the history of the sex fairness provisions of the vocational education portion of the Education Amendments of 1976, presenting the specific language of relevant sections of the law and regulations. The bibliography for Chapters II (by topic), III, and IV is contained at the back of the document.

This report is part of a full study of sex stereotyping and discrimination in vocational education, and efforts to overcome them. This involved a sizable primary data collection effort, including interviews with students, teachers, and administrators (at the state, district, and local levels) in all 50 states and in 100 schools. Results of this primary data collection and analysis are presented in Volume I of the study's final report. Two other products have resulted from the study as well:

- A Case Study Report. This will describe several particularly effective programs and/or approaches to meeting the problems of sex stereotyping and discrimination in vocational education.
- A Replication Handbook. This will contain the instruments used in the study to assess sex equity and measure progress in overcoming it. It should provide some useful tools for such efforts at the federal, state, and local levels in the future.

Chapter I
EXECUTIVE SUMMARY

Chapter I

EXECUTIVE SUMMARY

For the better part of two decades--since the enactment of the watershed civil rights laws of 1963 and 1964--discrimination against women in employment has been illegal. And since the passage of Title IX of the Education Amendments of 1972, all education programs receiving federal aid have been required to give females equal standing with males.

Nevertheless, in 1976, as part of the Vocational Education Amendments of that year, Congress concluded that the nation's vocational education system should go beyond nondiscrimination and should take positive steps aimed at narrowing the disparities between women's and men's employment and earnings opportunities. In line with this mandate, Congress also called for a research study that would describe in detail positions of women and men in the vocational education system and in job categories for which that system trains its graduates. The trends and conditions set forth in the study then would be used as a base against which to measure subsequent progress toward Congress's goal of greater equality.

The following pages summarize the findings of the study's first stage--the widest and most thorough review yet attempted of existing data on differences between male and female participation in the vocational education system and in the related employment categories.

This review has found large and critical gaps in the available data. Still, the existing statistics and analyses point with authority toward several important conclusions, the most significant of which is this: While women have penetrated most areas of the labor force in greater numbers than before, they continue to cluster in a disproportionately large way in a few, relatively low-paying occupations traditional for their sex. At the same time, women so far have failed to penetrate in any significant way many of the best-paying industrial job categories which traditionally have been dominated by men and for which vocational education represents an important entry point.

What is the Problem?

Rapid social change has produced an anomaly: women's pattern of labor force participation is becoming more like men's, but their wages and job choices are not. Women formed only 29.6% of the labor force in 1950, but by 1976 accounted for 40.5%. Women are increasingly likely to be single, to be heads of households, or to be major contributors to the economic support of their families. Yet despite high labor force participation rates and financial motivation, women continue to earn much less than men. In 1975 white males who worked year round full time had median annual earnings of \$12,877. White females who worked year-round full time had median annual earnings of \$7,441, or 58% of the male median. This is roughly the same percentage that women's earnings have been of men's since 1960. (The percentage was actually slightly higher in the 1950s, about 63%). Minority women had lower average earnings than white women, but had narrowed the gap substantially. In 1960 their earnings were 70% of white women's, in 1970, 85% and by 1976 these had reached 94%.

One of the major reasons for the persistent income disparity between men and women is the continued clustering of women in a small group of relatively low-paying occupations that have traditionally been considered "women's work," such as personal services and clerical work. In 1977, for example, 34% of all employed women were in clerical jobs--a higher percentage than in 1960, when it was 29.2%.

Two types of change would equalize the incomes of the sexes: higher pay for traditionally female work, and an increase in the employment of women in higher paying, traditionally male jobs. Studies have shown that women working in predominantly male fields earn, on the average, considerably more than women who work in traditionally female fields, even though their wages lag behind those of men in those fields.

There are many reasons for the clustering of women in the traditionally female jobs. Outright discrimination has locked women out of many jobs, and continues to be a factor despite federal and state laws prohibiting it. More subtle forces of socialization cause women to narrow their career choices at a young age. By fifth grade both boys and girls perceive some jobs as being

"for girls" and other "for boys." Family and social pressures continue to mold women's job choices when they are adults, restricting their choices and ambitions. Men, of course, are pressured in an analogous way to choose traditionally male occupations. Their range of choices and financial rewards, however, are much greater than those of women, although they may pay a price in the form of greater exposure to physical and emotional stress.

Hasn't All This Changed in Recent Years?

A detailed analysis of the employment of men and women in the years 1960, 1970, and 1977 revealed a variety of trends. Given that the percentage of the labor force as a whole that is female has grown, one would expect that all major job categories would show an increase in the percentage of women workers. By and large this is the case. But some of the most important categories--the higher paid and traditionally male skilled crafts, for example--actually registered a decrease in the percentage of women employed between 1970 and 1977, following a slight increase between 1960 and 1970.

To highlight those occupations which have led the labor force as a whole in the employment of women, as well as those which lagged or countered the trend, the authors constructed an index based on the ratio between the percentage of the workers in each selected occupation who are women and the percentage of females in the entire labor force. An index of 100 means that a job has the same proportion of women as the labor force as a whole. For example, the job of secretary had an index of 245 in 1977, meaning that it was about 2 1/2 times more heavily female than the labor force in general.

The index shows that the broad occupational categories dominated by men in 1960 continued to be so dominated in 1977; those dominated by women in 1960 were likewise dominated by them in 1977. Sharp gains or reductions in women's participation were limited to a few, somewhat narrowly defined occupations. For example, the index of relative female employment for bus drivers jumped to 104 in 1977 from only 31 in 1960. The index for meat cutters and butchers climbed to 87 from 65 over the same period, while that for sewers and stitchers fell to 235 from 287 and that for hairdressers and cosmetologists dropped from 269 to 218.

What is the Role of the Schools?

The schools, by and large, have served to reinforce the sex stereotypes of the larger society. Girls have been encouraged to develop "feminine" behavior patterns and prepare for lives as wives and mothers and not as wage earners. When they have enrolled in courses to prepare for gainful employment, they have concentrated heavily on traditionally female fields.

A review of the enrollment statistics compiled by the U.S. Office of Education reveals a gradual trend toward increased enrollment of students in programs not traditional for their sex. For example, the traditionally male trades and industry group rose to 12.7% female in 1976 from 11.7% in 1972, while the female percentage in programs in the traditionally female health occupations group dropped to 78.7% from 84.7% over the same period.

But the pace of this change has been very slow, as can be seen in the statistics comparing the program choice of female students from year to year. Of all women enrolled in vocational education in 1976, 27.4% were in office occupations, down only marginally from the 1972 figure of 27.8%. In 1976 women enrolled in trades and industry programs accounted for 4.9% of female vocational education enrollments, compared with the 1972 level of 4.3%

Moreover, there is little evidence that the schools have accelerated this trend significantly. The few studies that have attempted to explore the reasons for the choices of nontraditional courses by women vocational education students have found that the students themselves, rather than teachers or counselors, initiated the nontraditional choice.

Studies of cooperative education programs, in which students are placed in jobs as part of their school program, have also shown patterns of traditional sex stereotyping. Women students at the secondary level are employed primarily in clerical, sales, and service jobs, while men are distributed throughout all areas but are virtually the only occupants of blue collar jobs.

Staffing patterns in vocational education programs, as measured in 1972 and 1974, show that teachers are distributed along these same sex-role lines. For example, in 1972 men represented 100% of teachers in agriculture programs

and 89.3% of those in trades and industry, while women constituted 98.7% of the teachers in home economics and 88.2% of those in health. In addition, less than 11% of vocational education teachers were from racial/ethnic minorities in 1972.

What Perceptions and Aspirations Are Behind These Figures?

Studies of students' career aspirations and expectations tend to show a perpetuation of traditional sex-role patterns. For example, young women underestimate the probability that they will be in the labor force as adults. In choosing careers, young women are highly likely to choose clerical fields (26.4% in one study) and unlikely to choose skilled crafts (0.6%). Both males and females aspire to professional careers at unrealistically high levels (47.9% of females, 41.2% of males).

All studies of students' choices found students listing the most important influences on their plans as self, parents, and peers. Among school personnel, teachers were seen as more influential than counselors. One study of women in nontraditional jobs reported that exposure to opportunities was the single most important influence on their choice. Little difference in family background was found between women choosing nontraditional tracks and those choosing the traditional ones.

Although no nationwide data were found concerning student and staff attitudes towards the roles of men and women in the labor force, small-scale studies of students showed that more females than males believed that women should work for pay to help support their households and that many more males (72.4%) than females (46.7%) felt that certain occupations are not appropriate for women.

Local studies also showed that both students and staff have a low level of awareness of sex inequities within schools. Projects designed to increase sex equity reported some success in increasing awareness among students and staff of sex stereotyping problems and of opportunities for students in fields not traditional for their sex.

How Are the Schools Doing in Implementing Title IX?

Implementation of Title IX of the Education Amendments of 1972, which prohibits sex discrimination in educational programs benefiting from federal funds, has not been systematically studied. However, small surveys and anecdotal evidence reflect mixed progress. Some states and schools have been moving ahead to equalize opportunities for the sexes in classroom and extra-curricular activities, and in sports and employment. Some have moved in only one or two of these areas, and some seem to have moved not at all.

The Primary Data Collection and Analysis Effort

Following the review of existing literature and data sources, the American Institutes for Research commenced an effort to survey all 50 state education agencies and the District of Columbia, and a sample of 100 secondary and postsecondary institutions. The goal of this survey was to fill in several of the more significant gaps in the existing data. In particular, the survey is designed to illuminate state and local response to Congress's call for positive action to overcome sex stereotyping in vocational education programs. The results are presented in Volume I of this Final Report.

Chapter II
SECONDARY DATA REVIEW

Chapter II

SECONDARY DATA REVIEW

Notes on Methodology

The activities involved in the review of secondary data were:

- identification of available information sources
- development of a plan for reviewing information sources
- conduct of the reviews
- preparation of a summary report.

Information sources were located through computerized bibliographic searches from the National Technical Information Service (NTIS) and the Educational Resources Information Center (ERIC) and consultations with members of the Advisory Committee and AIR's and SFK's staff. Examples of the types of sources that were used are:

- Studies reported in such journals as the Monthly Labor Review, The American Journal of Economics and Sociology, and the Women's Lobby Quarterly.
- Government data sets, including the Office of Civil Rights' (HEW) studies on vocational education and the Department of Labor's (Bureau of Labor Statistics) studies on participation in the work force.
- Reports from government agencies specifically responsible for vocational education, such as the National and State Advisory Councils on Vocational Education and State Departments of Education.
- Sex equity project reports including those funded under the Commissioner of Education's and the States' discretionary portions of Part C of the 1968 vocational education legislation.
- Reports of federally-financed or foundation-sponsored studies conducted by universities or research centers.
- Study and project reports from various agencies of the federal government, including the Office of Education; the National Academy of Sciences; the Office of Planning, Budget, and Evaluation; the Bureau of Occupational and Adult Education; and the National Institute of Education.

In most cases, information was available in written form; however, in other instances, no written documents had been produced. When necessary, interviews were conducted with appropriate personnel.

A standardized procedure was developed for reviewing and summarizing written and interview data. Each piece of information was first reviewed to determine which of the 18 research topics it addressed. It was then recorded on pre-categorized identification and summary sheets. These summary sheets were then filed according to research topic. Finally, information from all data sources relating to a specific topic was analyzed and summarized. A series of training sessions was conducted in which all reviewers of secondary data were taught to record information in a systematic way, to provide similar amounts of detail, and to define terms consistently.

For a few topics, such as employment patterns and wages, fairly rich data sources were found. For most of the topics, however, data were scarce and those which were found were often restricted to one state or even one school district. It was particularly difficult to find data disaggregated by-sex-by-race/ethnicity. Because of extensive variation in the availability of data from topic to topic, it was not feasible to establish rigid standards for inclusion in or exclusion from the paper. Where high quality, comprehensive national data were available, they of course were given first priority. In such cases, additional studies are included only when they shed new light on the topic. For those topics for which reliable, nationwide data were not available, however, data from more limited studies were included. In a few cases no data of sufficient relevance and reliability to merit inclusion were found.

In the interests of readability, not all available tables have been included for each topic. An attempt has been made to steer a middle course between treating each topic concisely and including all possible information. The reader interested in additional detail on any given topic is referred to the original studies in question, listed in the bibliography by topic.

Each topic contains the following sections:

- The central research question(s)
- A brief summary of the information found
- Detail on the studies and data found which speak to the research question(s).

TOPIC ONE: Trends in the Sex Segregation of Occupations in Fields for which Vocational Education Programs Train.

Research Question

The primary research question suggested by Topic One is:

How many males and females of different ethnic backgrounds hold jobs in traditionally male, female, and mixed occupations for which vocational education students are trained?

Summary

Data show a strong increase over time in the participation of women in the labor force. The overall pattern of distribution of women among job categories, however, remained basically the same in 1977 as it was in 1960. Women are still heavily concentrated in traditionally female jobs such as secretary (99.1% female in 1977) and waiter/waitress (90.4% female in 1977) and form only a small percentage of workers in traditionally male jobs such as plumbers (0.5% female in 1977) and automobile mechanics (0.9% female in 1977). There has, however, been a decrease in sex segregation in a number of jobs for which vocational education trains. For example, there have been gains in female participation in jobs as protective service workers and bus drivers far in excess of the increase in women's participation in the labor force as a whole.

Review of the Secondary Data

Has the labor force become less sex segregated in recent years? Are women more or less likely to be found working in traditionally female jobs than they were ten or twenty years ago? A review of the simple percentages of women workers in each of the standard job classifications shows a continuance of the basic traditional patterns. For example, in 1960 women were 97.1% of all secretaries. In 1970 they were 97.6% and in 1977 they were 99.1%. At the same time, in 1960 women were 0.4% of all carpenters. In 1970 they were 1.3% and in 1977 they were 0.9%. At first glance these figures appear to show an increase in sex segregation, particularly between 1970 and 1977 and in fact, for some occupations, this is the case.

The issue is complicated, however, by the tremendous growth in the female labor force. For while in 1960 the labor force was 32.8% female, by 1970 it had become 37.7% female. By 1977, 40.5% of all workers were women. One would expect, then, that all occupations would have become more heavily female--both traditionally female occupations and traditionally male occupations.

To give a clearer picture of what has actually happened in a number of selected occupations for which vocational education programs train, the authors have constructed an index that compares participation of women in each job category with their participation in the labor force as a whole for the years 1960, 1970, and 1977 (see Table 1.1). The index was obtained by dividing the percentage that women form of each occupation by the percentage of the labor force as a whole, then multiplying by 100. For example, in 1960 women formed 32.8% of the labor force and 97.1% of the workers classified as secretaries. The secretarial index for 1960 is therefore $(97.1 \div 32.8) \times 100$ or 296. This shows that in 1960 the job of secretary was almost three times as heavily female as the labor force as a whole. A job that had the same percentage of women as the labor force as a whole would have an index of 100. A job that had a smaller percentage of women than the labor force as a whole would have an index of less than 100.

Let us look again at the job of secretary across the years. In 1960 the index was 296. In 1970 it had fallen to 259. By 1977 it was down to 245. Thus, although the job of secretary is still almost entirely female (99.1% in 1977) it has not increased in percentage of females as rapidly as the labor force as a whole. In this particular case, of course, there is a ceiling phenomenon as one approaches 100%.

If we look at various categories of jobs, we see the following patterns:

Professional, technical and kindred workers

Women form just about the same percentage of this large category as they do of the labor force as a whole with indices of 117, 105, and 105 for the years 1960, 1970, and 1977 respectively. By detailed occupation, of course, the sex distribution varies dramatically. Looking at two technical fields--health technologists and technicians

Table 1.1

COMPARISON OF THE PARTICIPATION OF WOMEN IN SELECTED JOB CATEGORIES
WITH THE PARTICIPATION OF WOMEN IN THE LABOR FORCE IN 1960, 1970, 1977

Occupation	Index* of Participation of Women		
	1960	1970	1977
<u>Total Labor Force</u>			
number employed	64,639,256	77,308,792	90,546,000
percent female	32.8	37.7	40.5
index*	100	100	100
<u>Selected Job Categories</u>			
Professional, technical, and kindred workers	117	105	105
Health technologists and technicians	208	185	176
Engineering and science technicians	27	29	37
Sales workers	109	101	107
Sales, clerks, retail trade	193	171	174
Sales representatives, wholesale trade	13	17	19
Clerical and kindred workers	210	195	195
Bank tellers	214	229	222
Bookkeepers	254	218	222
File clerks	255	217	209
Secretaries	296	259	245

*The index is calculated by dividing the percentage of workers in a job category who are female by the percentage of the entire labor force that was female in that year, then multiplying by 100. For example, in 1977, 90.0% of all bank tellers were female while 40.5% of the entire labor force was female. The 1977 index for bank tellers is, therefore, $90/40.5 \times 100$ or 222. This shows that in 1977 the job of bank teller was more than twice as heavily female as was the labor force as a whole.

Occupation	Index of Participation of Women		
	1960	1970	1977
Craft and kindred workers	9	13	12
Carpenters	1	3	2
Painters, construction, and maintenance	6	11	8
Blue collar supervisors, not elsewhere classified	20	21	22
Machinists	4	8	7
Mechanics and repairers	3	5	3
Tailors	81	83	86
Telephone installers and repairers	6	9	12
Bakers	55	79	98
Operatives, except transport	108	101	98
Assemblers	125	128	124
Clothing ironers and pressers	207	199	193
Meat cutters and butchers, manufacturing	65	69	87
Meat cutters and butchers, except manufacturing	9	14	17
Sewers and stitchers	287	249	235
Welders and flame cutters	14	15	16
Transport equipment operatives	5	12	17
Bus drivers	31	74	104
Taxicab drivers and chauffeurs	8	15	25
Truck drivers	--	4	3
Nonfarm laborers	16	22	23
Animal caretakers	93	84	115
Gardeners and groundskeepers	4	8	10

Occupation	Index of Participation of Women		
	1960	1970	1977
Service Workers, except private households	157	146	144
Cleaning service workers	99	84	86
Food service workers	206	180	169
Health service workers	253	234	220
Personal service workers	162	176	183
Hairdressers and cosmetologists	269	239	218
Housekeepers, except private household	256	191	160
Protective service workers	11	16	20

* Source: Data on 1960 and 1970: Di Cesare, 1976
 Data on 1977: U.S. Department of Labor, Bureau of Labor Statistics, 1978

and engineering and science technicians--we see a progressive decrease in sex segregation. The index for health technicians has dropped from 208 in 1960 to 176 in 1977 while the index for engineering and science technicians increased from 27 in 1960 to 37 in 1977.

Sales workers

Women form about the same percentage of sales workers as they do of the labor force with indices of 109, 107 and 107 for 1960, 1970, and 1977 respectively. Women maintain their predominance in the field of retail sales clerks with a 1977 index of 174. This is down from 193 in 1960 but up slightly from 171 in 1970. The field of sales representative, wholesale trade remains heavily male, but has seen an increase in female employment in excess of the increase in the labor force as a whole. The index has climbed from 13 in 1960 to 16 in 1970 and 19 in 1977.

Clerical and kindred workers

Clerical work remains a female stronghold with approximately twice the percentage of women workers as the labor force as a whole, but the concentration has not increased. The index was 210 in 1960, fell to 195 in 1970 and remained at 195 in 1977.

There was some variation from job to job. The index for bank teller increased from 214 in 1960 to 229 in 1970, then decreased slightly to 222 in 1977. For bookkeepers the index fell from 254 in 1960 to 218 in 1970 and rose to 222 in 1977. File clerks saw a steady drop from 255 to 217 to 209.

Craft and kindred workers

The small representation of women in craft jobs grew faster than their participation in the labor force between 1960 and 1970. However, between 1970 and 1977 the participation in these jobs grew more slowly than their participation in the labor force as a whole and in some jobs there was an absolute decline in the percentage of workers who were female. The index for the broader category went from 9 in 1960, when 3.1% of craft workers were

women, to 13 in 1970, when 5.0% of craft workers were women. In 1977 the percentage of craft workers who were women remained at 5%, but because there was an increase in the overall participation of women in the labor force, the index fell to 12 for that year.

The index rose between 1960 and 1970 but then fell in 1977 for carpentry, painters, machinists and mechanics. A steady rise in the index occurred in the fields of blue collar supervisor, tailor, telephone installer, and baker.

Operatives, except transport

In this category the percentage female has decreased slightly but stayed approximately proportionate to the percentage female in the labor force as a whole. The index declined from 108 to 101 to 98. Some of the female-intensive occupations in this category such as clothing ironers, and sewers and stitchers remain heavily female, but have decreased slightly in comparison to the female labor force participation rate. The index for clothing ironers and pressers moved from 207 in 1960 to 199 in 1970 and 193 in 1977. For sewers and stitchers the index was 287 in 1960, 249 in 1970 and 235 in 1977.

Some heavily male jobs have seen growth in the female percentage greater than the rise of women's participation in the labor force. Meat cutters and butchers (manufacturing) has moved from an index of 65 in 1960 to 69 in 1970 and 87 in 1977, while meat cutters and butchers, except manufacturing, went from an index of 9 in 1960 to 14 in 1970 and 17 in 1977. The field of welders and flame-cutters rose slightly from 14 to 15 to 16.

Transport equipment operatives

This category has seen an increase in female participation substantially in excess of overall growth in the female labor force. While women still form only a small percentage of all workers in this field (6.8% in 1977) the index has moved from 5 in 1960 to 12 in 1970 and 17 in 1977. The growth is accounted for largely by the job of bus driver, the index for which has gone from 31 in 1960 to 74 in 1970 and 104 in 1977. Substantial growth has also

occurred in the category of taxicab drivers and chauffers, with an index of 8 in 1960, 15 in 1970, and 25 in 1977. The job of truck-driver shows a pattern similar to that seen in some of the skilled craft jobs. The index rose from essentially zero in 1960 to 4 in 1970, but declined to 3 in 1977 reflecting an absolute decline in the percentage female from 1.5% in 1970 to 1.3% in 1977.

Nonfarm laborers

The index rose in this category from 16 in 1960 to 22 in 1970 and 23 in 1977. There was a substantial rise in the index for gardeners and groundskeepers from 4 in 1960 to 8 in 1970 and 10 in 1977. Animal caretakers saw a decline in the index from 93 in 1960 to 84 in 1970, followed by a jump to 115 in 1977.

Service workers, except private household

While in 1977 service work still accounted for more working women than any other field except clerical, the index showed a slight decline from 157 in 1960 to 146 in 1970 and 144 in 1977. This pattern appeared for food service workers and health service workers, while the field of cleaning service workers saw a drop from 99 in 1960 to 84 in 1970 followed by a slight rise to 86 in 1977. The general category of personal service workers saw a rise in the index from 162 in 1960 to 176 in 1970 to 183 in 1977. However, the sub-categories of hairdresser and cosmetologists and housekeepers saw a decline. There was an increase in the percentage of women in protective service jobs (police, fire, security guards) substantially greater than the overall growth in female participation in the labor force. The index rose from 11 in 1960 to 16 in 1970 and 20 in 1977. The total percentage remained small, of course, at 7.9% in 1977.

Additional Information

The following pages present additional information from secondary data sources to provide a more in depth look at changes in the labor force in the last two decades. Data on labor force participation are collected regularly by the Bureau of the Census, U.S. Department of Commerce and analyzed and published in a variety of ways by both Census and the Bureau of Labor Statistics, U.S. Department of Labor. Historical data on women in the labor force have been compiled and published in a number of government documents including

U.S. Working Women: A Databook (U.S. Department of Labor, 1977), A Statistical Portrait of Women in the U.S. (U.S. Department of Commerce, 1976), and Handbook of Women Workers (U.S. Department of Labor, 1976). Various analyses of the statistics have also been written, and will be referred to.

The first of these publications (DOL, 1977) compares the growth in the labor force as a whole from 1950 to 1976--a growth of 52%--with the growth in the female labor force during the same time--a growth of over 100%. Women formed 29.6% of the total labor force in 1950, but had grown to 40.5% by 1976. (See Table 1.2). Table 1.3 disaggregates women's labor force participation by age. The most dramatic increase occurred in the 25 to 34 age range, an age at which most women have children in the home. The next largest increases are in ages 20 to 24 and 35 to 44. These numbers reflect both a decline in the birth rate and an increased willingness of mothers of school age or preschool age children to work outside the home. The labor force participation rate of mothers with children aged 6-17 years grew from 28.3% in 1950 to 53.7% in 1976. The rate for mothers of children under six more than tripled, growing from 11.9% in 1950 to 37.4% in 1976.

Table 1.4 compares the labor force participation rates of men and women over the years. While the rate for women has been steadily increasing, the rate for men has been steadily decreasing, reflecting a trend toward earlier retirement. The unemployment rate for men ranged from a low of 2.8% in the early 1950s to a high of 7.9% in 1975. In every year except 1958 the unemployment rate for women was higher than for men. The women's rate ranged from a low of 3.3% in 1958 to a high of 9.3% in 1975.

DOL (1977) comparisons by race and ethnicity show that among women, the labor force participation rate of minority women has historically been much higher than the rate among white women. The rates have come closer in recent years, however, as whites have increased their employment more rapidly than minorities. Among men, the minority labor force participation rate has historically been slightly lower than the rate among white men. Unemployment rates for minorities have historically been approximately twice as high as those for

Table 1.2

WOMEN IN THE LABOR FORCE, ANNUAL AVERAGES,
SELECTED YEARS, 1950-76

(Numbers in thousands)

Year	Labor Force		
	Total, both sexes	Women	
		Number	Percent of total
1950	62,208	18,389	29.6
1955	65,023	20,584	31.6
1960	69,628	23,240	33.4
1965	74,455	26,200	35.2
1970	82,715	31,520	38.1
1975	92,613	36,998	39.9
1976	94,773	38,414	40.5

Source: U.S. Working Women: A Databook. U.S. Department of Labor, Bureau of Labor Statistics, 1977.

Table 1.3

LABOR FORCE PARTICIPATION OF WOMEN BY AGE,
ANNUAL AVERAGES, SELECTED YEARS, 1950-76

	Percent of population in labor force			
	1950	1960	1970	1976
Total 16 years and over	33.9	37.7	43.3	47.3
16 and 17	30.1	29.1	34.9	40.7
18 and 19	51.3	50.9	53.6	59.0
20 to 24	46.0	46.1	57.7	65.0
25 to 34	34.0	36.0	45.0	57.1
35 to 44	39.1	43.4	51.1	57.8
45 to 54	37.9	49.8	54.4	55.0
55 to 64	27.0	37.2	43.0	41.1
65 and over	9.0	10.8	9.7	8.2

Source: U.S. Working Women: A Databook. U.S. Department of Labor, Bureau of Labor Statistics, 1977.

Table 1.4

LABOR FORCE PARTICIPATION RATES OF WOMEN AND MEN,
ANNUAL AVERAGES, 1950-76

Year	Percent of population in labor force	
	Women	Men
1950	33.9	86.4
1951	34.6	86.5
1952	34.7	86.3
1953	34.4	86.0
1954	34.6	85.5
1955	35.7	85.3
1956	36.9	85.5
1957	36.9	84.8
1958	37.1	84.2
1959	37.1	83.7
1960	37.7	83.3
1961	38.1	82.9
1962	37.9	82.0
1963	38.3	81.4
1964	38.7	81.0
1965	39.3	80.7
1966	40.3	80.4
1967	41.1	80.4
1968	41.6	80.1
1969	42.7	79.8
1970	43.3	79.7
1971	43.3	79.1
1972	43.9	79.0
1973	44.7	78.8
1974	45.6	78.7
1975	46.3	77.9
1976	47.3	77.5

Source: U.S. Working Women: A Databook. U.S. Department of Labor, Bureau of Labor Statistics, 1977.

whites. If one rank orders the unemployment rates for any given year, the white males have the lowest rate, white females have the second lowest, minority males are third, and minority females are last, having by far the highest rate.

Women of Spanish origin have a labor force participation rate lower than that of white women, and an unemployment rate higher than that of white women but lower than that of the group labeled "Black and other." Men of Spanish origin have labor force participation rates higher than those of white men, and unemployment rates higher than those of whites but lower than those of the group labeled "Black and other."

Viewing labor force participation when those of Spanish origin are divided into Mexican-Americans and Puerto Ricans, the DOL (1977) shows that, in March 1976, the participation rate for women was highest for Blacks (50.5%) and lowest for Puerto Ricans (30.5%), while for men, the rate was highest for Mexican-Americans (80.3%) and lowest for Blacks (66.6%). Unemployment at that time was highest for Mexican-American women (14.0%) and lowest for White women (7.9%), while for men, the rate was highest for Blacks (14.6%) and lowest for Whites (7.2%).

The general view of the participation of men and women in the labor force, as noted, shows a steady trend of increasing participation by women over the past 26 years. Where are these women employed? The index presented earlier partly answers this question. The discussion that follows illuminates the issue further.

Table 1.5 shows the occupational distribution of men and women by occupation group as of March 1976. White women are overwhelmingly concentrated in white collar jobs (66.2%), primarily clerical (36.4%). Minority women show this distribution also, but to a lesser degree. For all ethnicities except Puerto Rican, more women are in clerical jobs than any other type.

In contrast, men tend to be concentrated in blue collar jobs. Among white males an equal percentage are in white collar jobs and blue collar jobs (43.8%). But among all other groups, blue collar jobs strongly predominate. The largest

Table 1.5

OCCUPATIONAL DISTRIBUTION OF EMPLOYED WOMEN AND MEN BY RACE AND SPANISH ORIGIN
MARCH 1976

Occupation Group	Women						Men					
	White	Black	Spanish Origin				White	Black	Spanish Origin			
			Total	Mexican American	Puerto Rican	Other			Total	Mexican American	Puerto Rican	Other
Total employed: Number (thousands) . .	30,222	3,804	1,325	753	184	425	45,687	4,014	2,169	1,353	259	594
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White collar	66.2	42.4	46.5	44.1	42.8	51.5	43.8	21.0	23.8	18.1	22.1	38.6
Professional-technical	16.5	13.1	7.8	6.0	8.1	10.8	16.0	7.2	7.7	5.5	6.1	13.6
Managerial administrative, except farm . .	6.1	2.6	3.1	3.2	0.5	3.8	15.1	4.1	.7	5.6	5.9	9.9
Sales	7.2	2.3	4.8	4.8	4.5	4.7	6.5	1.9	3.0	2.1	3.8	4.8
Clerical	36.4	24.4	30.8	30.1	29.7	32.2	6.2	7.5	6.4	4.9	6.3	10.3
Blue collar	14.0	18.8	30.0	27.0	39.0	31.7	43.8	56.9	57.5	62.4	51.1	47.7
Crafts	1.5	1.0	2.7	3.0	2.7	1.9	21.0	15.7	19.4	19.1	15.0	22.1
Operatives, including transport	11.4	16.6	25.8	22.3	34.5	28.9	16.4	26.7	26.5	29.0	27.5	19.5
Laborers, except farm	1.1	1.2	1.5	1.7	1.8	0.9	6.4	14.5	11.6	14.3	8.5	6.1
Service	18.8	38.4	22.1	26.3	18.1	16.2	8.1	18.4	13.1	10.9	24.0	13.6
Service, except private household	16.6	27.4	17.3	20.8	16.0	11.5	8.1	18.2	13.1	10.9	24.0	13.6
Private household	2.2	11.0	4.8	5.5	2.1	4.7	-	0.2	-	-	-	-
Farm	1.0	0.2	1.6	2.6	-	0.2	4.3	3.7	5.7	8.4	2.7	0.6
Farmers and farm managers	0.2	0.1	0.1	0.1	-	-	2.8	0.8	0.4	0.6	-	0.2
Farm laborers and supervisors	0.8	0.1	1.5	2.5	-	0.2	1.5	2.9	5.3	7.8	2.7	0.4

Source: U.S. Working Women: A Databook. U.S. Department of Labor,
Bureau of Labor Statistics, 1977.

occupational group for males of all ethnicities is operatives. Among white males professional-technical jobs are a close second, but among minorities, professional-technical jobs trail all blue collar jobs and nondomestic service jobs.

DiCesare (1975) compared the data available from the 1970 census with that from the 1960 census. This comparison shows that the greatest growth in the number of women employed occurred in those clerical and service jobs already dominated by women. DOL (1978) statistics show women continuing to dominate certain traditional female occupations in 1977: librarians (83.4%), nurses (92.8%), bank tellers (90.0%), bookkeepers (90.0%), secretaries (99.1%), dressmakers (98.3%), private household workers (97.0%), dental assistants (98.4%), and hairdressers (88.2%). Very few women in 1977 were employed as engineers (2.7%), dentists (2.9%), electricians (0.2%), plumbers (0.5%), tool and die makers (1.6%), crane operators (0.6%), meat cutters (7.0%), truck drivers (1.3%), gardeners (4.2%), or fire fighters (0.4%). In addition, women represent 44.3% of the employees in wholesale and retail trade and 56.1% of those in service industries, but only 8.5% in mining, 6.4% in construction, 29.8% in manufacturing, and 22.3% in transportation and communications.

Waldman and McEddy (1974) analyzed the distribution of women in the workforce utilizing data from the monthly survey of payroll records conducted by the Bureau of Labor Statistics, the monthly survey of households (Current Population Survey) conducted by the Bureau of the Census, and the U.S. Decennial Census of Population. Comparing census figures from 1940, 1950, 1960, and 1970, they found that the service industry had consistently had a labor force approximately 60% female. (See Table 1.6). By 1973 it had more female workers (6.8 million) than any other industry. As of January 1973, the trade industry was the second largest employer of women (6.3 million), most of whom held jobs in retail stores. While women were half of the employees in retail trade, they were only one-fourth of the employees in wholesale trade.

The U.S. Commission on Civil Rights has recently (August 1978) published a work entitled Social Indicators of Equality for Minorities and Women. One of the topics treated in this is occupational segregation, or the degree to which individuals in different groups have different occupations. The statistic used to measure this is called the "index of dissimilarity." It is,

Table 1.6

WOMEN EMPLOYED AS WAGE AND SALARY WORKERS IN NONAGRICULTURAL INDUSTRIES, 1940-70

[Numbers in thousands]

Industry	1940			1950			1960			1970		
	Total employed	Women		Total employed	Women		Total employed	Women		Total employed	Women	
		Number	Per- cent of total		Number	Per- cent of total		Number	Per- cent of total		Number	Per- cent of total
Total nonagricultural industries.....	32,058	9,794	31	43,478	14,113	32	54,579	19,449	36	69,115	27,496	40
Mining.....	869	12	1	880	22	2	626	30	5	616	50	8
Construction.....	1,603	33	2	2,752	86	3	3,062	130	4	3,976	244	6
Manufacturing.....	10,317	2,323	23	14,053	3,594	26	17,142	4,354	25	19,566	5,623	29
Durable goods.....	5,162	604	12	7,460	1,219	16	9,621	1,707	18	11,596	2,483	21
Nondurable.....	5,155	1,719	33	6,478	2,337	36	7,464	2,627	35	7,970	3,140	39
Knitting mills.....	217	130	60	189	119	63	195	132	68	962	445	46
Apparel, etc.....	768	522	68	1,036	754	73	1,131	858	76	1,201	939	78
Leather and leather products.....	363	139	38	371	167	45	345	173	50	282	160	57
Food and kindred products.....	1,054	197	19	1,328	311	23	1,757	417	24	1,364	356	26
Meat products.....	207	32	15	267	55	21	311	76	24	(¹)	(¹)	(¹)
Canned and preserved food and sea- food.....	89	32	36	140	57	41	202	85	42	(¹)	(¹)	(¹)
Confectionary and related pro- ducts.....	70	36	51	73	37	51	75	38	51	(¹)	(¹)	(¹)
Chemicals and allied products.....	433	76	18	642	129	20	850	163	19	980	222	23
Transportation and public utilities.....	2,911	345	12	4,138	666	16	4,268	757	18	5,039	1,106	22
Telecommunications.....	392	210	54	637	389	61	818	426	52	1,071	522	49
Radio and TV.....	23	5	22	(¹)	--	--	87	22	25	131	33	25
Trucking and warehouse.....	330	17	5	545	42	8	776	61	8	992	106	11
Wholesale and retail trade.....	5,522	1,669	30	8,122	3,013	37	9,653	3,835	40	13,810	5,871	43
Wholesale.....	1,009	174	17	1,687	362	21	1,943	422	22	2,907	699	24
Retail.....	4,514	1,495	33	6,434	2,651	41	7,710	3,413	44	10,903	5,172	47
General merchandise.....	718	468	65	873	595	68	1,211	821	68	2,005	1,392	69
Eating and drinking.....	817	385	47	1,266	719	57	1,429	912	64	2,061	1,271	62
Apparel and accessory stores.....	356	181	51	408	266	65	442	317	72	667	437	66
Finance, insurance and real estate.....	1,294	435	34	1,670	739	44	2,417	1,181	49	3,610	1,870	52
Services.....	6,984	4,321	62	8,584	5,007	58	11,668	7,241	62	18,282	11,436	63
Personal, including private household and hotels...	3,268	2,449	75	2,930	2,097	72	3,247	2,464	76	3,010	2,256	75
Private households.....	2,196	1,931	88	1,598	1,405	88	1,880	1,701	90	(¹)	(1,124)	(¹)
Business and repair.....	583	64	11	999	155	16	1,181	287	24	2,006	624	31
Professional service.....	2,796	1,736	62	4,166	2,623	63	6,803	4,352	64	12,707	8,352	66
Medical and health.....	745	543	73	1,365	1,006	74	2,223	1,710	77	3,907	3,096	79
Medical and health, except hospitals.....	(¹)	(¹)	--	393	302	77	544	448	82	1,249	1,039	83
Hospitals.....	(¹)	(¹)	--	972	704	72	1,679	1,262	75	2,658	2,057	77
Education.....	1,514	976	64	2,019	1,283	64	3,292	2,062	63	6,080	3,788	62
Private.....	(¹)	(¹)	--	470	281	60	762	464	61	1,550	957	62
Government.....	(¹)	(¹)	--	1,549	1,002	65	2,530	1,598	63	4,530	2,831	62
Legal ²	156	85	54	120	81	68	144	109	76	386	178	46
Other services, including recreation and amusement....	338	72	21	489	131	27	437	138	32	559	204	36
Public administration ³	1,758	350	20	2,471	648	26	3,194	909	29	4,216	1,297	31
Postal service.....	309	36	12	451	52	12	551	65	12	719	144	20
Federal public administration.....	299	104	35	1,003	339	34	1,266	444	35	1,528	546	36
State and local.....	848	203	24	1,017	258	25	1,377	400	29	1,824	557	31
State.....	(¹)	--	--	244	100	38	396	152	38	538	202	38
Local.....	(¹)	--	--	753	158	21	981	248	25	1,285	355	28
Industry not elsewhere reported.....	800	305	38	809	338	42	2,548	1,013	40	--	--	--

¹Data not available.²1940 figures include engineers and miscellaneous professionals.³1940 figures are for government instead of public administration.

NOTE: Because some industries are not included in this table, subgroups do not always add to total for major industrial division.

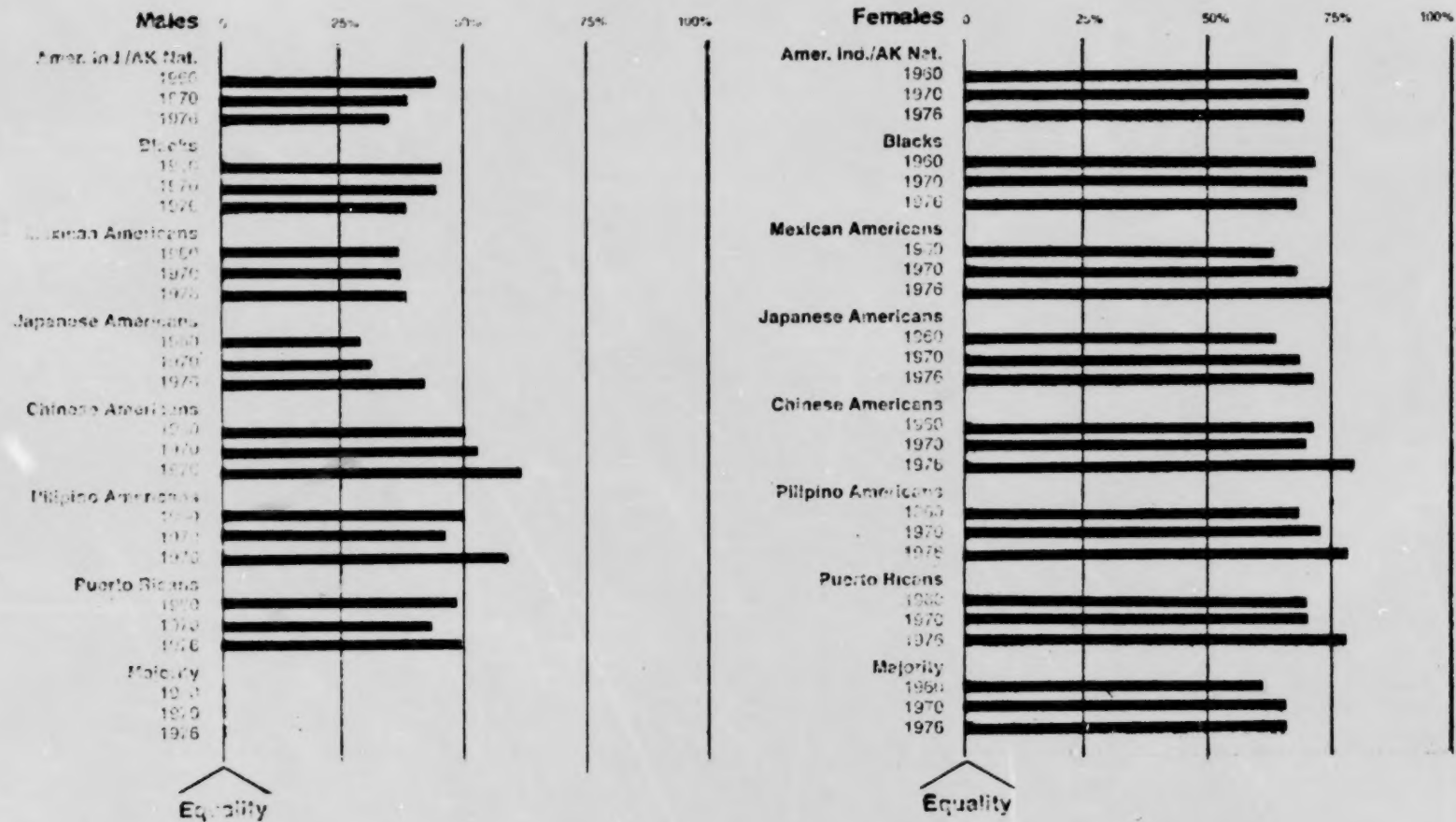
Source: Waldman and McEddy, 1974. Census of Population, Industrial Characteristics, 1940 (Vol. III). 1950 (P-E No. 1b), 1960 (PC(2)7F), 1970 (PC(2)7C); (Bureau of the Census).

quite simply, the percentage of a group who would have to change occupations in order for the group to have the identical occupational distribution of a comparison group (in this case, majority males). Figure 1.7 provides a display of how males and females from various racial/ethnic groups fare on this index for three comparison dates: 1960, 1970, and 1976. Certain generalizations are apparent from this figure. On the average, over 40% of minority men would have to change occupations to have the same distribution as majority men. For women, this figure is nearly 75%. And for both men and women, differences for most minority groups have grown since 1960. Thus, rather than women and minority males becoming more similar to majority males in their employment patterns, there has been a slight trend in the opposite direction, and there exists a dramatic absolute difference today.

Figure 1.7

SOCIAL INDICATOR: OCCUPATIONAL SEGREGATION

Compared with majority males.*



* A value of 0% represents an occupational distribution equal to that of majority males.

Source: Social Indicators of Equality for Minorities and Women,
U.S. Commission on Civil Rights, 1978.

TOPIC TWO: Wages of Males and Females with Jobs in Occupations for which Vocational Students Are Trained.

Research Question

The major research question suggested by Topic Two is:

How much do males and females of different ethnic backgrounds earn for jobs in traditionally male, female, and mixed occupations for which vocational education students are trained?

Summary

Women who work full-time, year round, earn, on average, about half as much as men who work full-time, year round. This varies somewhat by specific occupation. By and large, women who work in fields in which women predominate earn less than women who work in fields where men predominate. Minority males earn less than white males, but more than white or minority females. Minority females earn slightly less than white females, but the gap is not as great as it is among the males. Detailed information on wages by occupation is not currently available by-sex-by-race/ethnicity. However, such information will be gathered as part of the 1980 census, and more ethnic detail is being included in newer Department of Labor information systems.

Review of the Secondary Data

In 1975 white males who worked year round full time had median annual earnings of \$12,877. White females who worked year-round full time had median annual earnings of \$7,441, or 58% of the male median. This pattern has been maintained through the years. Table 2.1 below compares men's and women's earnings for each year from 1955 to 1970. Data for 1975 appears in Table 2.2 below. If we compare the earnings of minority males and females with these figures and each other, we find that black males earned 71% of the white male median, Mexican-American males earned 72%, and Puerto Rican males earned 66%. Within each ethnicity, however, the males out-earned the females. Black women earned 79% as much as black men. Mexican-American women earned 64% as much as Mexican-American men. Puerto Rican women earned 84% as much as Puerto Rican men. Comparing the earnings of minority females

Table 2.1

MEDIAN EARNINGS OF FULL-TIME YEAR-ROUND WORKERS,^{1/}
BY SEX, 1955-70 ^{2/}

Year	Median earnings		Women's median earnings as percent of men's
	Women	Men	
1970-----	\$5,323	\$8,966	59.4
1969-----	4,977	8,227	60.5
1968-----	4,457	7,664	58.2
1967-----	4,150	7,182	57.8
1966-----	3,973	6,848	58.0
1965-----	3,823	6,375	60.0
1964-----	3,690	6,195	59.6
1963-----	3,561	5,978	59.6
1962-----	3,446	5,794	59.5
1961-----	3,351	5,644	59.4
1960-----	3,293	5,417	60.8
1959-----	3,193	5,209	61.3
1958-----	3,102	4,927	63.0
1957-----	3,008	4,713	63.8
1956-----	2,827	4,466	63.3
1955-----	2,719	4,252	63.9

^{1/} Worked 35 hours or more a week for 50 to 52 weeks.

^{2/} Data for 1967-70 are not strictly comparable with those for prior years, which are for wage and salary income only and do not include earnings of self-employed persons.

Source: U.S. Department of Commerce, Bureau of the Census: Current Population Reports, P-60.

Table 2.2

MEDIAN ANNUAL EARNINGS OF WOMEN AND MEN WHO WORKED YEAR ROUND,
FULL TIME BY RACE AND SPANISH ORIGIN, 1975

Sex and Earnings	White	Black	Spanish Origin			
			Total	Mexican American	Puerto Rican	Other
Women						
Worked year round, full time in 1975 ¹ (thousands)	15,371	2,043	636	326	82	229
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Under \$2,000 ²	4.5	4.2	4.6	5.8	2.5	3.5
\$2,000 to \$4,999	15.4	21.4	23.0	27.6	18.5	18.4
\$5,000 to \$9,999	54.6	53.2	58.0	55.2	64.2	60.5
\$10,000 to \$14,999	20.3	18.4	12.9	10.1	14.8	14.9
\$15,000 to \$24,999	4.7	2.8	1.6	0.9	-	2.6
\$25,000 or more	0.5	0.1	0.2	0.3	-	-
Median annual earnings, 1975	\$ 7,441	\$7,223	\$6,388	\$5,945	\$7,144	\$6,758
Men						
Worked year round, full time in 1975 ¹ (thousands)	33,975	2,775	1,511	907	201	464
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Under \$2,000 ²	2.1	1.8	1.5	1.4	1.5	1.5
\$2,000 to \$4,999	4.1	10.8	7.7	9.6	5.0	5.0
\$5,000 to \$9,999	23.3	40.0	46.3	45.8	57.2	41.6
\$10,000 to \$14,999	33.0	32.9	28.7	27.6	27.9	32.2
\$15,000 to \$24,999	28.8	13.5	13.4	13.6	7.5	16.1
\$25,000 or more	8.6	0.9	2.3	1.9	1.0	4.0
Median annual earnings, 1975	\$12,877	\$9,098	\$9,413	\$9,247	\$8,512	\$10,197

¹ The survey was conducted in March 1976 and counted persons 16 years and over as of the survey date who worked 50 to 52 weeks in 1975, usually full time (35 hours or more per week).

² Includes workers with no earnings or a loss.

with those of white females, we find that black women earned 97% as much as white women. Mexican-American women earned 80% of the white women's median, and Puerto Rican women earned 96% of this median wage. Clearly, the minority women are suffering a double disadvantage in earnings, but the earnings reduction attributable to being female is greater than the earnings loss attributable to ethnic group.

Sommers (1974) conducted a detailed analysis of the earnings data for men and women from the 1970 census. She found that men earned more than women in every occupation except public kindergarten teacher. She also found, however, that the level of earnings for an occupation is associated with the proportion of women in that occupation. That is, women in occupations dominated by men, while earning less than men in those occupations, earn more than women who work in occupations in which women predominate.

Jusenius and Shortlidge (1975), examining data from the National Longitudinal Study, found that in the years 1966-1971 white women tended to move out of traditionally female occupations, while black women tended to move into them. This caused the black women moving into traditional jobs to suffer a decline in earnings relative to white women (from 89% to 81%). Those black women who moved to atypical jobs had an increase in earnings. Both black and white women who were in atypical jobs in 1971 had higher hourly pay rates than women in typically female jobs.

A comprehensive review of the literature on sex differences in labor force participation and earnings was developed by Patricia Cayo Sexton (1977). In reviewing studies that explored the earnings gap between men and women, she found that the percent of the gap attributed to sex discrimination ranged from 12% to 50%. Five studies found that about 33% of the difference in pay was left unexplained after accounting for differences in age, education, race, residence, experience, unionization, turnover, absenteeism, hours worked, and other relevant variables. A study that controlled for the occupations of men and women in more detail found only 12% unexplained, suggesting that much of the gap is related to the concentration of women in low paying jobs. Additional studies (Blau, 1975) have shown that earnings differences within occupations are caused largely by differences among firms. That is, men tend to work in larger firms with higher pay scales.

The U.S. Commission on Civil Rights has recently published a book entitled Social Indicators of Equality for Minorities and Women (1978). It reports on a technique for comparing people from different groups (race, sex, etc.) which eliminates other biasing factors. Statistical adjustments are made, by the use of multiple regression, to each minority group's level of education, level of job prestige, income level of the state of residence, weeks worked, hours recently worked per week, and age. Differences in earnings found after adjustments for these factors are assumed to be due to membership in the group in question. In general, a high degree of similarity exists among the minority groups and considerable inequity between minority groups and the majority male group. Women of all groups suffer even more substantial inequity. Table 2.3 provides detail on these differences. It presents figures for three comparison years: 1959, 1969, and 1975. It suggests that progress toward equality over these years has been moderate for most male groups, and marginal or negative for most women.

Table 2.3

ADJUSTED MEAN EARNINGS FOR THOSE WITH EARNINGS

	Original Means			Original Ratios (group/majority males)			Adjusted ^a Means			Earnings Ratios for Adjusted Means (group/ majority males)		
	1959	1969	1975	1959	1969	1975	1959	1969	1975	1959	1969	1975
Males												
Amer. Ind./Alask. Nat.	\$2878	\$5623	\$8302	.54	.62	.73*	\$3926	\$7097	\$10575	.73	.78	.92**
Blacks	2808	5434	7470	.52	.59	.65	3793	6885	9741	.71	.75	.85
Mexican Americans	3412	5852	7456	.64	.64	.65	4527	7219	9414	.84	.79	.82
Japanese Americans	5142	9159	12615	.96	1.00	1.10	4490	8363	9999	.84	.91	.88
Chinese Americans	4771	8001	10339	.89	.87	.90	4465	7430	8817	.83	.81	.77
Filipino Americans	3603	6852	11366	.67	.75	.99	3707	7550	11874	.69	.82	1.04
Puerto Ricans	3200	5839	8269	.60	.64	.72	4654	7776	11233	.87	.85	.98
Majority	5369	9150	11427	1.00	1.00	1.00	5369	9150	11427	1.00	1.00	1.00
Females												
Amer. Ind./Alask. Nat.	\$1924	\$3378	\$3958	.36	.37	.35	\$2824	\$4683	\$6136	.53	.51	.54
Blacks	1566	3383	4918	.29	.37	.43	2502	4707	6973	.47	.51	.61
Mexican Americans	1790	3030	3527	.33	.33	.31	2572	4298	5525	.48	.47	.48
Japanese Americans	2550	4618	5881	.48	.50	.51	2911	5303	6670	.54	.58	.58
Chinese Americans	2639	4366	6759	.49	.48	.59	3163	5348	7960	.59	.58	.70
Filipino Americans	2268	4499	6784	.42	.49	.59	2862	4996	6712	.53	.55	.59
Puerto Ricans	2244	4071	4714	.42	.44	.41	2958	5060	6468	.55	.55	.57
Majority	2686	4072	5122	.50	.44	.45	3039	4958	6568	.57	.54	.57

^a The adjusted technique substitutes the majority male mean values in a regression equation for the following variables: occupational prestige, age, education, weeks worked, hours worked last week, and the average income in the State of residence.

* This can be interpreted as follows: "In 1975, American Indian and Alaskan Native males earned, on the average, 73 percent of the majority male average earnings."

** This can be interpreted as follows: "In 1975, American Indian and Alaskan Native males with the same characteristics as majority males (in terms of occupational prestige, age, education, weeks worked, hours worked last week, and State of residence) could be expected to earn 92 percent of the amount that majority males earned."

Source: Social Indicators of Equality for Minorities and Women.
U.S. Commission on Civil Rights, 1978.

TOPIC THREE: Participation in Vocational Education Classroom Training Programs.

Research Question

The major research question under Topic Three is:

How many male and female students of different ethnic backgrounds at the secondary and postsecondary levels are participating in traditionally male, female, and mixed vocational education classroom programs?

Summary

Data are available annually on enrollments in vocational education programs by sex but not by-sex-by-race/ethnicity (Bureau of Occupational and Adult Education, 1977). These data show a heavy concentration of women in traditionally female programs and of men in traditionally male programs. Comparisons of the degree of concentration across the years 1969-1976 show a gradual tendency toward increased cross-sex enrollments.

Data by-sex-by-race/ethnicity are available for the years 1972 (Osso, 1974; Thompson, 1974) and 1974 (Kay, 1976; Office for Civil Rights, 1974). Only the OCR data, however, present sufficient detail on program enrollments. In general, the data disaggregated by-sex-by-race/ethnicity show general patterns of concentration by sex along traditional lines, but with distinct differences among ethnic groups.

Special studies of women enrolled in traditional and nontraditional programs have been done by Kane (1976; in progress) and Lewis and Kaltreider (1976). These show few background differences between traditional and nontraditional enrollees.

Some detailed enrollment studies are available from individual states and localities. New information systems still in the planning stage will provide detailed national data by-sex-by-race/ethnicity.

Review of the Secondary Data

Each year the Bureau of Occupational and Adult Education (BOAE), U.S. Office of Education, gathers from the states basic data on enrollment in

vocational education programs. From 1969 to 1972 the enrollment data are available disaggregated by sex, but not by sex-by-race/ethnicity. For 1973 and 1974 the data are not disaggregated by sex. For 1975 and 1976, the data are disaggregated by sex, but not by-sex-by-race/ethnicity. (BOAE, 1977; Duis, 1977.)

Table 3.1 compares the percentages of female enrollments for each program area in 1969, 1972, 1975, and 1976. In general, cross-sex enrollments in traditionally single-sex programs have increased. For example, the female predominance in Consumer and Homemaking had declined to 83.2% in 1976 from 95.5% in 1969. (The anomaly of a rise from 1975 to 1976 may be accounted for by the difference in data bases noted in the table footnote.) Similarly, the male predominance in Trades and Industry had declined slightly, as the female enrollment had risen to 12.7% of the total in 1976, up from 11.1% in 1969.

The same data can be analyzed to show the tendency of female students to be concentrated in traditionally female fields. Table 3.2 compares these patterns of concentration for 1976, 1975, 1972, and 1969. There is a definite, if slight, pattern of decrease in sex typing of program enrollments over the seven-year period from 1969 to 1976, but there are some disturbing reversals in this trend from 1975 to 1976. These apparent reversals may be accounted for by the inconsistencies in the data base noted above.

The basic enrollment data are not disaggregated by race/ethnicity. However, estimates are provided for the ethnic composition of the total figures for 1975. Table 3.3 presents these data. Overall, enrollments are approximately 77.4% White, 15.1% Black, 5.7% Hispanic, 1.1% Asian or Pacific Islander, and 0.8% American Indian or Alaskan Native.

In 1972, a nationwide study of vocational education students and staff was conducted by the National Center for Education Statistics. Data were collected on enrollments by sex and race/ethnicity, using the race and ethnic categories American Indian, Black/Negro, Oriental, Spanish Speaking, and Other. Each course enrollment is counted as one unit. Therefore, one student enrolled in a number of courses will appear as a data unit more than once. Tables 3.4 and 3.5 present the enrollment data by program area for all levels of schooling (including both secondary and post-secondary), by sex.

Table 3.1

1976 ENROLLMENTS AND COMPARATIVE PERCENTAGES
OF FEMALE ENROLLMENTS FOR 1976, 1975, 1972, and 1969

Program	Total* 1976 Enrollment	1976 Female Enrollment*	% Female 1976	% Female 1975**	% Female 1972	% Female 1969
Agriculture	971,690	109,951	11.3	9.2	5.4	2.0
Distribution	764,706	366,705	48.0	42.8	45.3	44.5
Health	605,619	476,802	78.7	71.7	84.7	92.2
Consumer and Homemaking	3,231,519	2,688,807	83.2	81.9	92.1	95.5
Home Economics Occupational Preparation	413,155	349,932	84.7	73.2	86.1	86.7
Office	2,538,000	1,907,146	75.1	69.3	76.4	78.0
Technical	389,797	44,135	11.3	10.7	9.8	8.7
Trades and Industry	2,661,864	338,389	12.7	12.6	11.7	11.1
Special	2,004,858	667,354	33.3	26.7	44.7	41.0
TOTAL	13,581,208	6,949,221	51.2	48.3	55.4	55.6

*Excludes California, Guam, Trust Territories, and the Virgin Islands

**Excludes California, Delaware, Illinois, Maine, Rhode Island, South Carolina, American Samoa, Guam, and the Trust Territories

Source: Bureau of Occupational and Adult Education
1977 analysis of data from 1969, 1972, 1975
Bureau of Occupational and Adult Education
1976 enrollment statistics

Table 3.2

DISTRIBUTION AMONG PROGRAMS OF FEMALES
ENROLLED IN VOCATIONAL EDUCATION

<u>Program</u>	<u>Percentage of Female Enrollments</u>			
	<u>1976*</u>	<u>1975**</u>	<u>1972</u>	<u>1969</u>
Agriculture	1.6	1.4	0.7	0.4
Distribution	5.3	5.4	4.5	5.7
Health	6.9	6.5	4.4	3.6
Consumer and Homemaking	38.7	42.1	45.1	50.3
Home Economics Occupational Preparation	5.0	4.3	3.7	2.2
Office	27.4	26.0	27.8	32.3
Technical	0.6	0.6	0.5	0.6
Trades and Industry	4.9	5.1	4.3	4.3
Special	9.6	8.5	9.0	0.6
TOTAL	100.0	99.9	100.0	100.0

* Excludes California, Guam, Trust Territories and the Virgin Islands

** Excludes California, Delaware, Illinois, Maine, Rhode Island, South Carolina, American Samoa, Guam, and the Trust Territories

Source: Bureau of Occupational and Adult Education
1977 analysis of data from 1969, 1972, 1975
Bureau of Occupational and Adult Education
1976 enrollment statistics

Table 3.3

ESTIMATED ENROLLMENT IN VOCATIONAL EDUCATION BY RACIAL/ETHNIC GROUP^{1/}
FISCAL YEAR 1975

	<u>Total</u>	<u>Percentage</u> [*]	<u>Secondary</u>	<u>Post- secondary</u>	<u>Preparatory</u>	<u>Supplemental</u>	<u>Apprenticeship</u>
TOTAL	12,424,988		7,010,774	1,773,474	840,305	2,653,378	147,057
American Indian or Alaskan Native	97,894	0.8	60,330	13,811	6,431	16,111	1,211
Black, not of Hispanic Origin	1,874,033	15.1	1,232,704	202,849	121,424	297,944	19,112
Asian or Pacific Islander	138,053	1.1	77,722	26,189	10,483	19,975	3,684
Hispanic	702,245	5.7	377,072	121,880	64,218	130,498	8,577
White, not of Hispanic Origin	9,612,763	77.4	5,262,946	1,408,745	637,749	2,188,850	114,473

^{1/} No reports: Connecticut, Illinois, New Jersey, Rhode Island, American Samoa, Puerto Rico, Trust Territory, Virgin Islands

^{*} Total is greater than 100% due to rounding.

Table 3.4

MALE ENROLLMENT IN VOCATIONAL EDUCATION CLASSES, BY SELECTED
PROGRAM AREA AND RACE/ETHNIC GROUP: UNITED STATES, 1972-73

ALL LEVELS

Race/Ethnic Group		Agri- culture	Dist Educ	Health	Home Ec (Home)	Home Ec (Occu)	Office/ Business	Tech Educ	Trade/ Industry	Row TOTALS
American Indian	No.	14,987	6,338	547	14,516	1,733	8,493	20,461	56,644	123,719
	%	2.4	3.7	3.3	9.5	4.5	3.1	9.1	4.8	4.6
Black/ Negro	No.	85,743	30,214	1,540	10,794	4,063	37,926	14,367	161,485	346,132
	%	13.8	17.8	9.2	7.1	10.5	13.7	6.4	13.7	12.9
Oriental	No.	2,786	1,368	70	1,662	321	2,941	1,730	47,123	53,000
	%	.5	.8	.4	1.1	.8	1.1	.8	4.0	2.2
Spanish- Speaking	No.	13,070	3,982	686	7,067	867	21,412	8,954	37,729	93,768
	%	2.1	2.4	4.1	4.6	2.3	7.7	4.0	3.2	3.5
Other	No.	497,288	124,333	13,866	116,410	30,489	202,552	174,179	855,509	2,014,626
	%	80.3	73.4	82.7	76.4	79.1	72.9	77.4	72.5	75.2
No Answer	No.	5,777	3,228	55	1,919	1,052	4,456	5,287	21,897	43,671
	%	.9	1.9	.3	1.3	2.7	1.6	2.4	1.9	1.6
Column TOTALS	No.	619,652	169,462	16,765	152,368	38,526	277,779	224,977	1,180,386	2,679,915
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Osso, Nicholas A. "Vocational Education: Characteristics of Students and Staff, 1972."
National Center for Educational Statistics, 1974.

Table 3.5

FEMALE ENROLLMENT IN VOCATIONAL EDUCATION CLASSES,
BY SELECTED PROGRAM AREA AND RACE/ETHNIC GROUP:
UNITED STATES, 1972-73

All Levels										
Race/Ethnic Group		Agri- culture	Dist. Educ.	Health	Home Ec. (Home)	Home Ec. (Occu)	Office/ Business	Tech. Educ.	Trade/ Industry	Row Totals
American	No.	1,658	8,263	3,018	53,716	5,878	37,055	1,014	9,923	120,525
Indian	%	4.0	4.5	2.9	3.7	2.6	2.6	3.0	4.9	3.3
Black/ Negro	No.	4,466	27,755	12,917	184,065	47,734	205,875	3,468	21,167	507,447
	%	10.7	15.2	12.4	12.6	21.0	14.6	10.2	10.5	13.8
Oriental	No.	1,336	1,456	336	13,558	793	15,142	1,633	8,042	42,295
	%	3.2	.8	.3	.9	.3	1.1	4.8	4.0	1.2
Spanish- Speaking	No.	1,263	5,902	3,283	34,884	4,495	55,332	2,655	14,527	122,342
	%	3.0	3.2	3.1	2.4	2.0	3.9	7.8	7.2	3.3
Other	No.	32,417	134,325	82,541	1,152,051	165,681	1,052,134	24,955	143,684	2,787,790
	%	77.9	73.7	79.2	78.7	72.3	74.4	73.4	71.6	76.0
No Answer	No.	491	4,676	2,164	25,305	2,984	48,010	271	3,473	87,373
	%	1.2	2.6	2.1	1.7	1.3	3.4	0.8	1.7	2.4
Column Totals	No.	41,631	182,377	104,259	1,463,579	227,565	1,413,548	33,996	200,816	3,667,772
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Enrollments classified as American Indian formed 4.6% of all male enrollments, but only 3.3% of all female enrollments. The male enrollments in this category were heaviest in trade/industry; the female, in home economics. However, it is interesting to note that American Indian males formed a much greater percentage of male home economics enrollments (9.5%) than they did of all male enrollments and American Indian females formed a much greater percentage of female trade/industry enrollments (4.9%) than they did of all female enrollments. One would, of course, need to know more detail about which specific programs accounted for these figures to interpret them.

Enrollments classified as Black/Negro formed 12.9% of all male enrollments. The greatest number of male Black/Negro enrollments appear in trade/industry and of female enrollments, in office/business. Male enrollments form a noticeably higher percentage of distributive education enrollments (17.8%) than their average. Female enrollments in this group form a higher than average percentage in home economics, occupational (21.0%)

Enrollments classified as Oriental formed 2.2% of all male enrollments but only 1.2% of female enrollments. The males were overwhelmingly concentrated in trades/industry, where they formed 4.0% of the total. The female enrollments were more than four times the average for this group in technical education (4.8%) and almost that high in trade/industry (4.0%). To interpret these high percentages, however, one would need a finer breakdown of programs in order to distinguish enrollments in female-dominant programs classified under trade/industry--such as cosmetology--from traditionally male-dominant programs. Similarly, a high percentage of Oriental female enrollments in agriculture (3.2%) may well be accounted for by high enrollments in ornamental horticulture.

Enrollments classified as Spanish Speaking formed 3.5% of the male enrollments and 3.3% of the female. The greatest number of males were in trade/industry and office/business. They formed more than double the percentage of male office/business enrollments than they did of the total. Once again, more detail about the specific programs in which they were enrolled is necessary to interpret this. Female enrollments in this group were heaviest in office/business, where they represented a slightly higher percentage than they did of female enrollments in general, and in home economics, where their percentage was lower than their average for all programs. Females in this category formed

a much higher percentage of trade/industry (7.2%) and technical education (7.8%) than they did of all programs, but once again one needs more detail to understand how much of this is caused by high enrollments in cosmetology or other female-dominant programs under these categories.

A more recent national study of vocational enrollments that reported data by-sex-by-race/ethnicity was a 1974 survey of area vocational schools conducted by the U.S. Department of Health, Education, and Welfare's Office of Civil Rights (OCR, 1977). Unfortunately, only the data from post-secondary schools were analyzed. These data support the view that what appear as cross-sex enrollments in single-sex dominant fields in the Osso data, may in fact be enrollments in traditional programs. For example, many of the minority female enrollments in trade and industrial occupations are in cosmetology which is predominantly female, and in commercial art occupations, which has approximately equal male and female enrollments. Interestingly, a large number also appear in law enforcement training, a field that has been predominantly male but is becoming mixed.

Asian women enrolled in programs grouped under technical occupations are heavily concentrated in "miscellaneous," scientific data processing and police science technology. Few are enrolled in electronic technology, which has the largest enrollment of Asian men. Two-thirds of the Asian women in programs in the field of agri-business occupations are in ornamental horticulture, but so are over half of the Asian men. Among American Indian women in agri-business programs, over half are in agricultural production and about one-quarter are in ornamental horticulture.

In general, one finds in these data, patterns of enrollment that generally follow traditional sex lines but that show distinct differences by racial/ethnic group.

In the National Longitudinal Study of the High School Class of 1972 (Fetters, 1975a), data concerning students' enrollment in various types of vocational education programs (agriculture, business or office, distributive, health, trade or industrial occupations and home economics) were collected. The National Longitudinal Study (NLS) is a continuing project monitored and primarily funded by

the National Center for Education Statistics. In 1972, a national probability sample of 19,136 seniors from 1,070 public and private and church-affiliated high schools participated in the base-year survey conducted by the Educational Testing Service. Three follow-up surveys of these students have occurred in 1974, 1975, and 1977. Table 3.6 presents data showing the distribution of surveyed students across programs. The data, however, are not analyzed and reported in a way that allows one to draw conclusions about patterns by-sex-by-race/ethnicity.

Kay (1976) provides enrollment data by sex (but not by-sex-by-race/ethnicity) on enrollments in noncollegiate post-secondary schools in 1973-74. (Another such study was conducted in 1977 and data should be available soon.) Table 3.7 shows the enrollment patterns. Concentration of each sex in those programs traditional to that sex are apparent. The seeming exceptional enrollment of females in trades and industry is largely accounted for by the cosmetology enrollments that fall into this category.

Walsh and Totten (1976) report on an assessment of vocational education programs for the disadvantaged. This study, commissioned by the Office of Planning, Budgeting, and Evaluation of the U.S. Office of Education, offers little reliable information on how the truly disadvantaged are being served by this program, since there is no clear definition of what is meant by "disadvantaged." The data, indicating enrollments by sex and by race, although sketchy (5% of the enrollments were unclassified by sex; 23%, by race) seem to indicate that males are significantly more heavily enrolled in postsecondary programs for the disadvantaged than are females. The data also indicate that on the secondary level, 57% of the students were receiving no skills training; on the postsecondary level, this percentage was 55%. Of those in skills training, 81% were in "general occupations" and only 19% were in "specific occupations" in secondary school. On the postsecondary level, 96% were in "general" and 4% were in "specific." The work experience that was reported showed stereotyping in placement, as nearly 80% of all women were assigned to food service, office work, child and hospital care, and cashier.

Studies by Kane (1976, 1977, in progress) have analyzed female enrollments. One study (1976) compared the characteristics of women in traditional,

Table 3.6

DISTRIBUTION OF NLS STUDENTS ACROSS PROGRAMS

Question 02. Which of the following best describes your present high school program?

Response	All Students	Sex		High School Program			Ethnic Category			Father's Education				
		Male	Female	Acad.	Gen'l.	Voc.	White	Black	Latin- Amer.	Not Known	Not HS Grad.	HS Grad.	Coll. Grad.	
Weighted Percentage of Students														
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
General	32.9	34.6	31.1	17.7	59.5	26.2	32.1	32.6	40.6	39.2	37.4	31.7	24.0	
Academic or College Preparatory	42.9	45.3	40.5	78.2	19.9	7.6	45.4	32.9	29.3	24.2	30.0	46.9	67.4	
Vocational or Technical: Agricultural Occupations	1.6	2.7	0.4	0.2	1.4	4.2	1.4	1.7	2.5	3.1	2.4	1.0	0.5	
Vocational or Technical: Business or Office Occupations	12.0	3.1	20.9	2.1	9.1	34.5	11.8	14.8	11.2	14.3	16.4	11.6	4.7	
Vocational or Technical: Distributive Education	2.5	2.8	2.2	0.6	2.7	5.8	2.3	3.0	4.1	3.9	3.2	2.3	1.1	
Vocational or Technical: Health Occupations	0.9	0.4	1.5	0.5	0.9	1.9	0.7	2.1	1.7	1.8	1.0	0.8	0.4	
Vocational or Technical: Home Economics Occupations	1.1	0.1	2.1	0.1	1.7	2.1	0.8	3.5	1.2	2.2	1.7	0.7	0.3	
Vocational or Technical: Trade or Industrial Occupations	6.0	11.0	1.2	0.7	4.8	17.6	5.5	9.2	9.4	11.3	7.3	5.0	1.7	
Number of Students Answering Question	16177	7963	8087	6864	5093	3942	12283	2015	719	2511	4371	6725	2570	

Source: Feters, 1975a

From: The National Longitudinal Study of the High School Class of 1972

Table 3.7

SEX OF STUDENTS ENROLLED IN NONCOLLEGIATE POSTSECONDARY SCHOOLS
WITH OCCUPATIONAL PROGRAMS, BY TYPE OF PROGRAM AND TYPE OF
SCHOOL: AGGREGATE UNITED STATES, 1973-74
(Excludes correspondence school enrollment)

Type of program and type of school	Total		Male		Female	
	Number (000s)	Percent	Number (000s)	Percent	Number (000s)	Percent
Total	1,341.0	100.0	633.9	100.0	657.1	100.0
Type of program						
Agri-business	8.4	.6	6.7	1.0	1.7	.3
Marketing/distribution	173.9	13.0	103.6	15.1	70.3	10.7
Health	168.1	12.5	17.3	2.5	150.8	22.9
Home economics	2.0	.1	.3	(1)	1.7	.3
Business/office	293.1	21.9	66.8	9.8	226.3	34.4
Technical	107.2	8.0	98.4	14.4	8.8	1.3
Trades/industrial	588.3	43.9	390.6	57.1	197.7	30.1
Type of school						
Vocational-technical	472.2	35.2	272.5	39.8	199.7	30.4
Technical institute	84.8	6.3	69.4	10.1	15.4	2.3
Business/office	320.3	23.9	130.4	19.1	189.9	28.9
Cosmetology/barber	113.8	8.5	12.9	1.9	100.9	15.4
Flight	75.7	5.6	72.6	10.6	3.1	.5
Trade	150.8	11.2	115.1	16.8	35.7	5.4
Hospital	71.4	5.3	4.7	.7	66.7	10.2
Other	52.1	3.9	6.3	.9	45.7	6.9

¹ Less than .05 percent.

NOTE: Details may not add because of rounding.

SOURCE: Kay, Evelyn R. "Enrollments and Programs in Non-Collegiate Postsecondary Schools, 1973-74." National Center for Educational Statistics, D. H.E.W., 1976.

nontraditional and mixed programs.* Data from the OCR survey, discussed above, were used to locate schools with a sufficiently high nontraditional enrollment for use in the study.

Ninety-four schools in 26 states were sampled, each with at least ten women students in nontraditional programs. Responses were analyzed from 860 nontraditional, 452 mixed and 612 traditional women students. Little difference was found in background characteristics of women in the three groups. Nontraditional students did tend to be older and more urban. Teachers and counselors saw the women themselves as initiating the choice of a nontraditional program. Educational personnel who were selected by nontraditional women as being very influential in their choice of a nontraditional occupation tended to be men rather than women and teachers rather than counselors.

Lewis and Kaltreider (1976) studied students in 11 secondary schools with 5 or more female students in traditionally** male programs in 1973-74. The females the study was able to locate tended not to be in "hardcore" male courses like auto body repair, but rather in mixed classes. Questionnaires were obtained from 520 students and 356 former students concerning their attitudes, experiences, and career plans and backgrounds. The findings were similar to those of Kane. The backgrounds of traditional and nontraditional students were quite similar, although parents of nontraditional females appeared to be more knowledgeable about and supportive of the career choices of their daughters than did parents of traditional females. Lewis and Kaltreider also found that the students rather than counselors initiated the choice of a nontraditional program.

In a study of vocational education programs for the handicapped, Walsh et al. (1974) assess program administration at the state level and at the

* Kane's definitions of these terms were as follows: traditional - a program with 75% - 100% female enrollment nationwide; nontraditional - a program with 0 - 25% female enrollment nationwide; mixed - a program with 25% - 75% female enrollment nationwide.

** Lewis and Kaltreider define a nontraditional student as one who is enrolled in a course not typical for his or her sex. Their labelling of specific courses varied by school, but were mainly determined on the basis of the judgment of local coordinators and past enrollment patterns.

project level; as well as provide case study interviews with students, parents and employers. Data were collected in 25 states, with a sample of 100 projects and a total of 1,001 student/parent interviews and 165 employer interviews. Most of the data regarding employment, types of programs, and student evaluations are delineated by sex. In the projects examined, vocational education offerings were over a wide range of programs, but the largest number were in the trade and industry category, which were primarily male, and in home economics, which were primarily female. The range of training was considerably wider for men than for women. Most women were enrolled in home economics, health, and prevocational training, with the remainder in distributive education and office/clerical classes.

Some individual state reports provide data on this topic. For example, in a report on Massachusetts law, women, and vocational education, Healy and Lund (1975) present enrollment data for Massachusetts Vocational Education Programs for fiscal year 1972. Enrollments are arrayed by program area and are given for each sex. Of all females in vocational education, 66.4% were in office occupations and 16.7% were in homemaking. The data are not stratified by ethnicity.

The New York State Advisory Council on Vocational Education (1977) reports on sex fairness policies in New York's occupational education programs. Data on all vocational education programs are available by sex, but not by-race-by sex. Enrollment comparisons from 1971-1976 show increased female participation in agriculture (8.5% to 24.7%), technology (3.8% to 7.6%) and in trade and industry (19.9% to 21.8%). The author notes that the overall pattern "appears to be one of increasing, although still small, numbers and proportions of women entering traditionally male occupations. There does not appear to be a comparable movement of men into traditionally female occupations."

A report on secondary vocational education in Connecticut by that state's Board of Education (1976) looks at (among other things) those who are admitted as compared to those who apply. The report indicates that family background and prior academic record have a significant impact on admissions. Also noted in this report is that a proportionate under-representation of enrolled females, blacks, and Spanish-speaking youth in some of the regional vocational technical

high schools has been documented since 1968 through an annual survey conducted by the Connecticut Commission on Human Rights and Opportunities. The report indicates that there has been some modest growth in female enrollment since 1968 (15% of all grade 9-12 and postsecondary enrollments during 1974-1975).

TOPIC FOUR: Male and Female Students in Cooperative Education Programs.

Research Question

How many males and females are participating in Cooperative Education and Work-Study Programs and what are their characteristics?

Summary

Little information is available on patterns of participation by sex or by ethnicity in cooperative education programs. Two studies that used nationwide samples and reported data by sex (Walsh and Breglio, 1976; Cohen and Frankel, 1973) found participation patterns to be along traditional sex-role lines. For example, Walsh and Breglio (1976) found that 63% of all the female enrollments in cooperative education were in clerical occupations. Males were more evenly distributed among occupations than were females, but accounted for virtually all the enrollments in trade and technical fields. A follow-up study 24 months later (Breglio, 1976) found that even in those cases in which men and women had been trained in the same general field, such as distributive education, men typically held jobs as management trainees while women worked as retail sales persons.

Review of the Secondary Data

Walsh and Breglio (1976) conducted an assessment of school supervised urban cooperative education programs. Describing the drawing of their sample, they note that they made an effort to choose programs which enrolled both men and women in order to obtain a balanced proportion of male and female students. In actual practice, however, the selections had to be on the basis of occupational area, which largely determined whether programs would be male or female dominated. They found that no women were enrolled in the two technical programs. However, women predominated in business and office, health and distributive occupations programs. Looked at in toto, enrollments were 46% female at the postsecondary level and 59% at the secondary. The study also presents data showing differences between cooperative education and other working students in terms of job category, sex, and educational level. It was found that women at the secondary level were employed primarily in clerical (63%),

Sales and management (13%), and service (20%) occupational areas. Men were fairly well distributed throughout all areas, but were virtually the only occupants of the blue collar area. Some of Walsh and Breglio's data are presented in Table 4.1.

Breglio, et al. (1976) report on program outcomes resulting from a 24-month follow-up study of an original assessment of school supervised work education programs. Findings showed that when men and women had been trained in the same general area, such as marketing and distribution, men typically held jobs as management trainees while women worked as clerks and retail sales persons.

As part of the National Longitudinal Study of the High School Class of 1972 (1974), described in Topic Three, some data concerning students' enrollment in work study and cooperative education programs were collected. The Student Questionnaire obtained data about students' sex, ethnicity, region of the country, knowledge of or participation in a cooperative education or work study program, achievement level in school, and physical disabilities that would limit kind or amount of work. The data, however, do not present detail on which specific cooperative education programs students were enrolled in, so that one cannot compare male and female participation by program area or occupation.

The data (Table 4.2) show that 46.1% of all students and 42.2% of vocational students had heard of cooperative education programs, and that 7.6% of all students and 17.6% of vocational students had participated in them. There were approximately equal percentages of men (7.9%) and women (7.3%), with slightly more black (10.4%) than white (7.2%) or Latin American students (8.2%).

The NLS data also show that 54.0% of all students, and 46.6% of vocational education students, had heard of work study programs, and 10.3% of all students, and 22.1% of vocational students, had participated in them. Approximately an equal percentage of boys and girls participated in work study, but a greater percentage of black students (16.7%) than white students (9.3%) or Latin American students (12.0%) were involved.

Table 4.1

OCCUPATIONAL AREAS IN WHICH MALE AND FEMALE PARTICIPANTS
AND NONPARTICIPANTS WERE EMPLOYED FOR SECONDARY
AND POSTSECONDARY PROGRAMS^a

(Percentages)

Occupational Area	Male				Female			
	Secondary		Post-secondary		Secondary		Post-secondary	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Professional	2.6%	2.8%	7.6%	3.1%	2.2%	4.9%	8.3%	6.3%
Clerical	20.9	12.8	20.7	16.5	63.0	44.1	16.7	46.9
Sales and management	4.2	12.8	25.5	18.1	12.7	14.7	58.3	29.7
Blue collar	56.0	33.3	41.4	52.0	1.7	2.0	6.3	4.7
Service	16.2	38.3	4.8	10.2	20.4	34.3	10.0	12.5

^aKey:

- (1) = participating students in cooperative education programs.
(2) = nonparticipating students.

Source: Walsh & Breglio, March, 1976

Table 4.2
STUDENT AWARENESS OF AND PARTICIPATION IN VARIOUS PROGRAMS
BY SEX, PROGRAM, ETHNICITY, AND FATHER'S EDUCATION

Question 04. Have you ever heard of or participated in any of the following high school educational programs?

Response	All Students	Sex		High School Program			Ethnic Category			Father's Education						
		Male	Female	Acad	Gen'l	Voc	White	Black	Latin-Amer	Not Known	Mor HS Grad	HS Grad	Coll Grad			
<u>Cooperative Vocational Education Program (Co-Op Program)</u>																
Weighted Percentage of Students																
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Never Heard of This Program	46.3	48.7	44.0	49.5	46.6	40.2	47.5	35.3	47.3	41.1	45.7	46.9	50.0			
Have Heard of This Program but Have Not Participated	46.1	43.4	48.8	47.9	46.2	42.2	45.3	54.3	44.5	46.5	44.6	46.9	45.8			
Have Participated in This Program	7.6	7.9	7.3	2.5	7.2	17.6	7.2	10.4	8.2	12.4	9.8	6.2	4.2			
Number of Students Answering Question	16016	7872	8017	5836	5019	3888	12251	1923	707	2441	4341	6672	2562			
<u>High School Vocational Education Work-Study Program</u>																
Weighted Percentage of Students																
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Never Heard of This Program	35.7	38.2	33.3	37.6	36.7	31.3	37.3	23.5	33.0	30.0	33.9	37.4	38.4			
Have Heard of This Program but Have Not Participated	54.0	51.3	56.7	59.1	52.3	46.6	53.4	59.7	55.0	52.9	53.1	53.8	56.7			
Have Participated in This Program	10.3	10.6	10.0	3.3	11.0	22.1	9.3	16.7	12.0	17.0	13.0	8.8	4.8			
Number of Students Answering Question	16002	7857	8019	6839	4998	3892	12251	1904	710	2426	4338	6678	2560			
<u>Neighborhood Youth Corps</u>																
Weighted Percentage of Students																
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Never Heard of This Program	49.6	52.4	46.9	52.3	49.1	45.3	54.0	17.0	34.9	39.3	46.6	51.5	57.7			
Have Heard of This Program but Have Not Participated	43.2	41.1	45.3	42.7	42.0	45.3	42.1	51.9	45.6	44.8	44.0	43.7	39.5			
Have Participated in This Program	7.2	6.5	7.8	4.9	8.9	9.4	3.9	31.1	19.6	15.9	9.5	4.9	2.8			
Number of Students Answering Question	15896	7789	7986	6817	4976	3834	12152	1914	697	2416	4312	6616	2552			
<u>Talent Search</u>																
Weighted Percentage of Students																
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Never Heard of This Program	75.0	76.9	73.2	77.1	73.8	73.2	78.0	52.4	69.8	66.2	74.0	77.2	78.1			
Have Heard of This Program but Have Not Participated	23.2	21.3	25.1	21.7	23.5	25.3	21.1	40.3	27.4	29.6	24.5	21.4	20.8			
Have Participated in This Program	1.8	1.9	1.6	1.2	2.7	1.5	1.0	7.3	2.7	4.2	1.5	1.4	1.1			
Number of Students Answering Question	15864	7777	7963	6819	4954	3820	12169	1875	693	2389	4303	6615	2557			
<u>Upward Bound</u>																
Weighted Percentage of Students																
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Never Heard of This Program	75.0	76.0	73.9	73.3	75.7	77.4	78.6	46.9	70.4	70.3	75.7	76.3	74.4			
Have Heard of This Program but Have Not Participated	24.2	23.3	25.2	25.9	23.4	21.9	21.1	49.0	27.0	28.1	23.1	23.2	25.1			
Have Participated in This Program	0.8	0.8	0.9	0.8	1.0	0.7	0.4	4.1	2.6	1.7	1.2	0.5	0.5			
Number of Students Answering Question	15910	7800	7987	6815	4989	3837	12174	1906	695	2405	4322	6630	2553			

Source: Fetter, 1973a.
From: The National Longitudinal Study of the High School Class of 1972.

Cohen and Frankel (1973) conducted an assessment of school-supervised work education programs. Their stratified sample of 50 programs included 36 that were secondary and 14 that were postsecondary; 30 occupational training, 14 dropout prevention, and 6 career exploration programs; 15 programs from farming regions, 11 from suburban communities, 9 in single industry areas, and 15 in major industrial/business centers. In all 1,016 students were sampled, 508 males and 508 females. The data showed that almost all of these programs tended to perpetuate the traditional differentiation of jobs in terms of sex. Only 3 of the 20 most frequently mentioned jobs had a balanced distribution of males and females (i.e., no more than 60% of one sex). These were correctional aides, cashiers, and waiters and waitresses. Cohen and Frankel concluded that the work education programs had not expanded students' career opportunities beyond traditional sex roles.

TOPIC FIVE: Male and Female Attrition Rates from Vocational Education Programs.

Research Question

The primary research question included under Topic Five is:

How many male and female students of different ethnic backgrounds and at the secondary and postsecondary levels drop out of traditionally male, female, and mixed vocational education programs?

Summary

No national data were found that allowed for comparisons of attrition rates from various vocational education programs by sex or by race/ethnicity.

Review of the Secondary Data

No national data were found that allowed for comparisons of attrition rates from different vocational education programs by sex or race/ethnicity. Some indications of attrition rates could be gleaned from studies that touched on this issue. For example, Development Associates, Inc. (1974) reports the findings of a study on the impact of vocational education facilities in a 13-state Appalachian region. On-site visits enabled 1,743 people to be interviewed. The study included no stratification by sex; however, the following information regarding the retention rates in these programs was reported as follows: 63% in the miscellaneous occupations group; 59% in the clerical and sales occupations group; and 55% in the professional/technical occupations group. Ninety-three percent of the sample was Caucasian, a representative proportion of the Appalachian population.

In another study, Eckland and Bailey (1977) report on attrition rates from two-year colleges using data from the Second Follow-Up Study of the National Longitudinal Study of the High School Class of 1972, which is not disaggregated by program. Hence, no information is available from them on attrition rates of students specifically in vocational education. Their data are reported in terms of sex and ethnicity (White, Black, Hispanic), as indicated below. The table shows that black males have the highest drop-out rate from two-year college, and that white females have the lowest drop-out rate.

Table 5.1

OUTCOMES OF 2-YEAR COLLEGE ENTRANTS, BY RACE AND SEX

Educational status as of October 1974	Whites		Blacks		Hispanics		All 2-yr. Entrants*
	Males	Females	Males	Females	Males	Females	
Percent Enrolled							
TOTALS	100	100	100	100	100	100	100
Completed program	11	18	14	10	5	9	13
Still enrolled in a 2-yr institution. .	24	20	16	27	38	40	23
Transferred to a 4-yr college	27	25	16	20	11	7	24
Dropped out of school	39	37	54	44	47	45	39
Number							
Respondents	1,244	1,135	135	178	102	86	2,918

* Includes American Indians, Asian Americans, and other ethnic groups, as well as persons not classified by ethnic group membership or sex.

Source: Eckland, B.K. and Bailey, J.P., Jr. "National Longitudinal Study of the High School Class of 1972: A Capsule Description of the Second Follow-Up Survey Data." Washington, D.C.: U.S. Department of Health, Education, and Welfare/Education Division, 1977.

Because of the paucity of data, some of the literature on attrition rates on training programs outside of vocational education was also reviewed. Dyson (1977) revealed that drop-out rates in apprenticeship programs are approximately equal for men and women, although many more men than women are involved in apprenticeship programs. Perry, et al. (1975) found males more likely than females to drop out of Opportunities Industrialization Centers training programs.

TOPIC SIX: Male and Female Students' Vocational Competencies.

Research Question

The major research question under Topic Six is:

How well do male and female students of different ethnic backgrounds perform in traditionally male, female, and mixed vocational education programs at the secondary or postsecondary level as measured by achievement or performance tests?

Summary

The research question asks how well male and female students of different backgrounds perform in vocational education programs as measured by achievement or performance tests. No national data were found that can provide answers to this question. However, several of the reports reviewed are useful in providing information regarding male and female aptitudes in vocational areas.

Hedges and Bemis (1974), for example, indicate there exists a large area in which there is no difference between male and female aptitudes. They base this claim on findings of extensive studies conducted by the Human Engineering Laboratory of the Johnson O'Connor Research Foundation.

Steele (1974), referring to a study by John Durkin of the Human Engineering Laboratory of the O'Connor Research Foundation supplements the information reported by Hedges and Bemis (1974), confirming that there exists many knowledge and aptitude areas in which there are no sex differences.

Review of the Secondary Data

Reports presenting data on males' and females' competencies as measured by achievement or performance tests were not available in the literature. However, useful information on students' (male and female) aptitudes in vocational areas are available and these are reviewed under this topic.

Hedges and Bemis (1974), in a discussion of the decline of sex stereotyping in the skilled trades, state that many women have the aptitude to perform jobs that have been dominated by men. A primary tool used to assess job applicants' aptitude in the skilled trades is the General Aptitude Test Battery. Of the seven areas (of the nine in this Battery) which are important to success in the skilled trades, two reveal no sex difference, women excel in four, and men excel in one. The authors also note that the Human Engineering Laboratory of the Johnson O'Connor Research Foundation has conducted extensive studies in the area of aptitudes, dating back to 1922, and has found that no significant sex differences exist in the majority of the aptitude and knowledge areas studies (see Table 6.1). While insufficient data exist regarding the ability of men and women to meet the physical demands of various occupations, including the skilled trades, the authors point out that increasing mechanization has reduced and continued to reduce requirements of strength and stamina.

In a report on women in vocational education, Steele (1974) notes the differences between male and female aptitudes. Citing John J. Durkin (1971), of the Human Engineering Laboratory of the Johnson O'Connor Research Foundation, Steele supplements the information provided by Hedges and Bemis (1974) in noting that there are many areas in which no sex differences exist. Information regarding areas in which males or females excel is provided below:

Males Excel

Grip
Structural visualization

Females Excel

Finger dexterity
Graphoria
Ideaphoria
Observation
Silograms
Abstract visualization

No Sex Difference

Analytical reading
Eyedness
Foresight
Inductive reasoning
Memory for design
Number memory

Objective personality
Subjective personal
Pitch discrimination
Rhythm memory
Timbre discrimination
Total memory
Tweezer dexterity

Table 6.1

COMPARISONS OF THE PERFORMANCE
OF MEN AND WOMEN IN SELECTED APTITUDE AREAS

Aptitude	Group with higher average performance
U.S. EMPLOYMENT SERVICE	
Numerical reasoning	--
Spatial reasoning	Male
Form perception	Female
Clerical perception	Female
Motor coordination	Female
Finger dexterity	Female
Manual dexterity	--
HUMAN ENGINEERING LABORATORY	
Abstract visualization	Female
Analytical reasoning	--
Eyedness	--
Finger dexterity	Female
Foresight	--
Grip	Male
Graphoria (accounting aptitude)	Female
Ideaphoria (flow of ideas in verbal pursuits)	Female
Inductive reasoning	--
Memory for design	--
Number memory	--
Observation	Female
Objective personality	--
Pitch discrimination	--
Rhythm memory	--
Silograms (word association)	Female
Structural visualization	Male
Subjective personality	--
Timbre discrimination	--
Tonal memory	--
Tweezer dexterity	--
Vocabulary (English)	--

NOTE: Dashes indicate no significant difference. Although the differences shown are statistically significant, in most cases they would be of little practical significance. To illustrate, USES research has found spatial reasoning to be important for many of the skilled trades. But the level required exceeds an employed worker average for only one trade. Studies of seniors in high schools throughout the country showed that 67 percent of the boys and 62 percent of the girls equal or exceed this average. This means that more than half the girls have at least the minimum amount of spatial reasoning needed for most skilled trades.

Source: Hedges and Bemis, 1974.

From: Human Engineering Laboratory of the Johnson O'Connor Research Foundation.

TOPIC SEVEN: Male and Female Vocational Graduates' Satisfaction with Careers.

Research Question

The main research question under Topic Seven is:

How satisfied with their careers are men and women of different ethnic backgrounds who participated in traditionally male, female, and mixed vocational education training programs?

Summary

Measurement of satisfaction with career is problematic in the best of circumstances, but raises extraordinary difficulties when one is dealing with groups that are not culturally homogeneous. The chief difficulty is caused by the intensely subjective nature of "satisfaction." People tend to express satisfaction when an experience matches their expectations. Expectations, however, vary widely with culture, sex, and time.

Not surprisingly, then, studies of satisfaction with career have yielded inconsistent results. One study (Walsh & Breglio, 1976) found that among secondary school students, more females than males were satisfied with their jobs while at the postsecondary level, the opposite was true. A follow-up study two years later found both sexes equally satisfied with their jobs, although the females had less stable jobs and earned considerably less money than the males.

However, another study (Lewis & Kaltreider, 1976) found male vocational graduates more satisfied with their jobs than females. This study also found males in nontraditional fields more satisfied than males in traditional fields, and females equally satisfied with traditional or nontraditional careers.

Using data from the National Longitudinal Study Study of the High School Class of 1972, Feters (1975a) found women to be more satisfied than men with their working conditions and job security, but men more satisfied with their opportunities for advancement and promotion.

Table 7.1

Comparisons Between Male & Female Participating and Nonparticipating
Students in Selected Success Criteria^a
(Percentages)

Success Variables	Total Sample				Males				Females			
	Secondary		Post-secondary		Secondary		Post-secondary		Secondary		Post-secondary	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Job satisfaction	70%	64%	72%	63%	68%	62%	74%	62%	76%	66%	66%	65%
Job responsibility	58	55	67	61	59	55	69	66	58	54	61	57
School satisfaction ^b	46	16	45	18	50	16	51	20	44	9	34	13
Desire job in same area ^c	58	39	72	50	65	38	74	52	58	44	76	54
Program helped de- cide occupation ^d	68	47	52	50	67	45	52	54	73	54	65	48
Would recommend pro- gram to friend ^e	92	61	88	56	93	61	95	58	95	70	84	64

^aKey:

(1) = participating students.

(2) = nonparticipating students.

^bPercentage who responded "liked school better" after enrolling in program (participants) or obtaining job (nonparticipants).^cPercentage who responded that they wanted a full-time job in same occupational area as their school job.^dPercentage who responded that the program (participants) or job (nonparticipants) helped them decide on a career.^ePercentage who would recommend program (participants) or job (nonparticipants) to friends.

Wilms (1974) found women more satisfied than men with jobs of the same status. He also found ethnic minorities were more satisfied than their white classmates if they had gone to a public school, but less satisfied if they went to a private school.

Review of the Secondary Data

Although no nationwide, comprehensive data were found addressing job satisfaction of vocational graduates by-sex-by-race/ethnicity, a number of studies have dealt with certain aspects of this issue. Walsh and Breglio (1976) report findings of a study of school supervised work education programs that examined work satisfaction of students in 30 successful urban cooperative education programs. Although a balanced proportion of male and female students was sought, selections had to be made on the basis of occupational area which largely determined whether programs would be male or female dominated. Results of the study indicated that at the secondary school level, more females than males were satisfied with their jobs but that fewer females were satisfied with their cooperative education programs or desired jobs in the same occupational areas. At the postsecondary level, however, fewer women experienced job satisfaction or high levels of job responsibility, and yet more women than men desired occupations in the same area. Some of the data reported by Walsh and Breglio are disaggregated by job category, sex, and educational level, but not by sex and ethnicity together.

A follow-up study two years after the initial project included second interviews with 803 students and a cohort group of 701 students not participating in successful cooperative education programs. Both female and male nonparticipants at the secondary and postsecondary levels were more likely to be working or in school than were program participants. Men were somewhat more likely to have stable jobs and earned significantly more money than their female counterparts. Nevertheless, the study found equal levels of satisfaction of men and women with their current jobs, across educational levels, and types of programs. This last finding suggests that because women appear to be more easily satisfied than men, perhaps because they have lower expectations, measures of satisfaction must be carefully interpreted within their context. The following table presents some of the study's findings.

In a study of women enrolled in traditional male vocational programs, Lewis and Kaltreider, et al. (1976) sampled the opinions of graduates who were one, two, and three years out of the programs. No distinction, however, is reflected in the data in terms of the years out of school. The sample was balanced geographically to include all sections of the country and degrees of urbanity. While data are available by sex, they are not disaggregated by ethnicity. Their data on job satisfaction, some of which are presented in Table 7.2 below, show that males were generally more satisfied with their jobs than were females, that men from nontraditional* programs were most satisfied, and that women from traditional and nontraditional programs had similar levels of job satisfaction.

Table 7.2

FORMER STUDENTS' OVERALL SATISFACTION WITH FIRST REGULAR JOB
AFTER HIGH SCHOOL BY SEX AND TRADITIONAL/NONTRADITIONAL ENROLLMENT

Satisfaction Rating	Females		Males	
	Non-traditional	Traditional	Non-traditional	Traditional
	%	%	%	%
Very satisfied	27	27	38	34
Satisfied	47	48	54	43
Dissatisfied	17	16	8	16
Very dissatisfied	10	10	0	7
Base Number	71	63	24	104

Source: Lewis and Kaltreider, 1976

* Lewis and Kaltreider define a nontraditional student as one who is enrolled in a course not typical for his or her sex.

Fetters (1975b) reports on the findings of the follow-up study of the National Longitudinal Study (NLS) of the High School Class of 1972, conducted one and one-half years after graduation. The data presented apply to all high school programs and are not disaggregated by vocational education programs. The following table presents findings on job satisfaction for males and females. Women are more satisfied than men with their working conditions and job security and permanence, but men are more satisfied with their opportunities for advancement and promotion.

Table 7.3

COMPARATIVE PROFILES OF CLASS OF 1972 HIGH SCHOOL GRADUATES
1½ YEARS AFTER GRADUATION--MALES VERSUS FEMALES - (Continued)

Item	Percent giving indicated response		
	All persons	Sex Male	Female
IV. CIVILIAN WORK EXPERIENCES			
● Had job in October 1973	64	67	61
● Satisfaction with various aspects of Oct.1973 job			
- working conditions	81	78	84
- job as whole	78	77	79
- security and permanence	73	70	77
- pay and fringe benefits	69	70	68
- importance and challenge	68	68	69
- opportunity for developing new skills	64	65	64
- opportunity for promotion and advancement in this line of work	60	61	63
- opportunity for promotion and advancement with this employer	58	60	57
● Hours per week usually worked by those employed in Oct.1973			
1-10	7	6	8
11-20	14	12	15
21-30	10	10	10
31-40	50	44	57
over 40	19	28	10

Source: Fetters, 1975b

In another report on the (NLS) follow-up of the High School Class of 1972, one and one-half years after graduation, Fetters (1975c) presents findings on

work orientation. While most of the data are general in nature, Fetters notes that orientation toward work values had decreased (in all programs) by eight percentage points since high school. Of interest here is that the amount of decrease was greatest for persons who had been in vocational-technical high school programs.

Wilms (1974) discusses a study of the effectiveness of public and proprietary vocational training. While the major part of this study deals with a comparison between public and proprietary vocational programs, there are some data on male, female, and ethnic minority (non-white) job satisfaction. In general, women appear to be somewhat more satisfied than men with jobs of the same status. Further, ethnic minorities were more satisfied overall than their white classmates if they went to a public school, but less satisfied than their white classmates if they went to a proprietary school.

TOPIC EIGHT: Male and Female Students' Career Plans and Vocational Educators' Influence on These Plans.

Research Questions

The primary research questions under Topic Eight include:

1. What are the likely and ideal career plans of male and female students of varying ethnic backgrounds and ages at the secondary and postsecondary levels in traditionally male, female, or mixed vocational education programs?
2. How much do such subgroups expect to earn, and how realistic are these expectations?
3. What are vocational educators' perceptions of the ideal and likely careers of male and female students of varying ethnic backgrounds?

Summary

Studies of students' career aspirations and expectations tend to show a perpetuation of traditional sex role patterns. For example, young women underestimate the probability of their being in the labor force (Jusenius and Sandell, 1974). Only 22.8% of young women aged 18-20 in 1968 thought they would be in the labor force at age 35, whereas the actual labor force participation rate for women in that age bracket in 1976 was 57.8%.

In choosing careers, young women were highly likely to choose clerical (26.4%) and unlikely to choose skilled crafts (0.6%), the opposite of the male pattern (Fetters, 1975a). Both males and females tended to aspire to professional careers at a seemingly unrealistically high level (47.9% of females, 41.2% of males) (Fetters, 1975a).

All studies found students listing the most important influences on their plans as self, parents, and peers. Among school personnel, teachers were seen as more influential than counselors. A study of women in nontraditional jobs reported that exposure to opportunities was the single most important influence on their choice.

Review of the Secondary Data

Jusenius and Sandell (1974), in a study of barriers to the entry of women into the labor force, analyzed data from the 1968 National Longitudinal Study concerning women's expectations of later employment. Findings indicate that younger women underestimate their likelihood of working at age 35. (See Table 8.1 below).

Table 8.1

WOMEN'S (Aged 14 to 24) EXPECTATION OF WORK STATUS
AT AGE 35 BY PRESENT AGE^a, 1968

	Age ^c			Total
	14 to 17	18 to 20	21 to 24	
Total number (thousands) ^b Percent working Percent keeping house	WHITES			
	307	2,623	3,995	6,925
	21.4	22.8	34.2	29.3
	78.6	77.2	65.8	70.7
Total number (thousands) ^b Percent working Percent keeping house	BLACKS			
	98	350	509	957
	62.2	48.8	56.7	54.3
	37.8	51.2	43.3	45.7

Source: Jusenius and Sandell, 1974

- a. Respondents from the 1968 National Longitudinal Survey women's cohort aged 14 to 24.
- b. Total excludes those respondents answering "don't know," "not applicable," or "other."
- c. Age as of date interviewed, 1968.

For example, among white women ages 18-20, only 22.8% thought they would be working outside the home at age 35. By contrast, the actual labor force participation rate for women in that age bracket in 1976 was 57.8%. Black women were more realistic in their estimates, although still low.

Tables 8.2 and 8.3 compare the estimates of young women of their work status at age 35 by their expected educational (Table 8.2) attainment with actual rates (Table 8.3). For example, among white women expecting 13-15

years of education, only 18.1% predict they will be working at age 35. In 1967, however, 44.8% of women in that category were employed outside the home.

Table 8.2

WOMEN'S (Aged 14 to 24) EXPECTATIONS OF WORK STATUS
AT AGE 35 BY EXPECTED EDUCATIONAL ATTAINMENT^a, 1968

	Expected educational attainment ^c			Total
	High school	13 to 15 years	16 Years +	
Total number (thousands) ^b Percent working Percent keeping house	WHITES			
	1,655	1,385	4,265	7,305
	26.8	18.1	32.7	28.6
	73.2	81.9	67.3	71.4
	BLACKS			
	206	155	488	849
Total number (thousands) ^b Percent working Percent keeping house	62.1	60.6	57.7	59.3
	37.9	39.4	42.3	40.7

Source: Jusenius and Sandell, 1974

a Respondents from the 1968 National Longitudinal Survey women's cohort aged 14 to 24, and those who were in school in 1968.

b Excludes those answering "don't know," "not applicable," or "other."

c Excludes those answering educational attainment of 11 years or less.

The National Longitudinal Study of the High School Class of 1972 (Fetters, 1974a) collected data on career choice and on students' perception of the influence of various factors on their choices. Career preference varied markedly by sex, following traditional patterns. (See Table 8.4 below). For example, 26.4% of the women preferred clerical careers compared to 2.1% of the males. At the same time, only 0.6% of the women preferred occupations in the skilled crafts, compared to 15.5% of the men. The data were not cross-tabulated by sex-by-race/ethnicity for occupational choice, so one cannot tell if there were variations within sex groups by ethnicity.

An additional question in this survey asked students who planned to become full-time homemakers how long they expected to remain at home. Thirty-eight percent of the women responded "permanently," 4.5% chose "until children are

Table 8.3

WOMEN'S ACTUAL EMPLOYMENT STATUS BY EDUCATION COMPLETED
OF WOMEN 30 TO 44 YEARS OF AGE^a, 1967

	Education Completed				Total	
	11 Years or Less	12 Years	13 to 15 Years	16 Years+		
	WHITES					
	Total number (thousands) ^a	5,623	6,894	1,695	1,295	15,553
	Percent employed ^b	44.0	46.1	44.8	53.5	45.8
	Percent full-time ^c	77.3	69.6	63.6	72.1	72.0
	Percent part-time	22.7	30.4	36.4	27.9	28.0
	Percent unemployed	2.6	1.5	2.0	1.0	1.9
	Percent out of labor force	53.4	52.4	53.2	45.0	52.3
	BLACKS					
	Total number (thousands) ^a	1,213	455	97	107	1,879
	Percent employed ^b	56.8	65.2	68.5	94.5	61.5
	Percent full-time ^c	60.7	74.0	85.4	87.8	68.0
	Percent part-time	39.3	26.0	14.6	12.2	32.0
	Percent unemployed	2.6	4.2	4.0	2.1	5.0
	Percent out of labor force	53.4	30.6	27.0	3.4	33.5

Source: Jusenius and Sandell, 1974

- a Respondents from the 1967 National Longitudinal Survey women's cohort aged 30 to 44.
- b Employed, unemployed, out of labor force, part-time and full-time; these categories are from the National Longitudinal Studies' employment status recode variables.
- c Full-time and part-time classifications are only for those who are employed.

Table 8.4

STUDENT OCCUPATIONAL CHOICE AND PARENT OCCUPATION
BY SEX, PROGRAM, ETHNICITY, AND FATHER'S OCCUPATION

Question 23. Which of the following occupational categories best describes the work that you would like to do, the work that your father (or male guardian) does, and the work that your mother (or female guardian) does?

Response	All Students	Sex		High School Program			Ethnic Category		Father's Education					
		Male	Female	Acad	Com'l	Voc	White	Black	Latin-Amer	Not Known	Not HS Grad	HS Grad	Coll Grad	
<u>The Work You Would Like to Do</u>														
Weighted Percentage of Students														
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Clerical Such As Bank Teller, Bookkeeper, Secretary, Typist, Mail Carrier, Ticket Agent	14.7	2.1	26.4	5.6	14.1	35.6	13.6	26.4	21.3	21.4	20.4	14.1	5.7	
Craftsman Such As Baker, Automobile Mechanic, Machinist, Painter, Plumber, Telephone Installer, Carpenter	7.7	15.5	0.6	3.2	10.5	14.6	7.9	3.7	8.5	11.0	9.9	7.5	3.8	
Farmer, Farm Manager	1.6	2.8	0.5	1.1	2.2	1.8	1.6	0.5	0.7	1.5	1.9	1.7	1.0	
Homemaker or Housewife	3.0	0.1	5.8	1.8	4.7	3.8	3.2	1.8	2.2	3.3	3.5	3.0	2.4	
Laborer Such As Construction Worker, Car Washer, Sanitary Worker, Farm Laborer	2.5	4.9	0.3	1.4	3.8	3.5	2.5	2.0	2.5	3.4	3.3	2.2	1.9	
Manager, Administrator, Such As Sales Manager, Office Manager, School Administrator, Buyer, Restaurant Manager, Government Official	3.1	4.9	1.4	3.5	3.0	2.3	3.1	3.6	3.8	2.5	2.5	3.3	3.6	
Military Such As Career Officer, Enlisted Man or Woman in the Armed Forces	2.4	4.2	0.8	1.9	3.4	2.4	2.4	3.6	1.8	3.0	3.2	2.2	1.9	
Operative Such As Meat Cutter, Assembler, Machine Operator, Welder, Taxicab, Bus or Truck Driver, Gas Station Attendant	2.3	4.0	0.8	1.2	3.0	3.9	2.3	3.0	1.8	2.6	3.2	2.8	1.1	
Professional Such As Accountant, Artist, Clergyman, Dentist, Physician, Registered Nurse, Engineer, Lawyer, Librarian, Teacher, Writer, Scientist, Social Worker, Actor, Actress	44.7	41.2	47.9	65.8	32.2	13.5	45.4	39.4	37.5	28.2	32.7	45.8	65.1	
Proprietor or Owner Such As Owner of a Small Business, Contractor, Restaurant Owner	1.8	3.3	0.5	1.5	2.7	1.5	2.0	1.0	1.6	2.0	1.6	1.8	2.3	
Protective Service Such As Detective, Policeman or Guard, Sheriff, Fireman	2.2	4.1	0.4	1.7	3.5	1.7	2.3	1.1	2.6	2.6	1.8	2.6	1.4	
Sales Such As Salesman, Sales Clerk, Advertising or Insurance Agent, Real Estate Broker	3.0	2.6	3.4	2.4	3.8	3.5	3.1	2.0	1.4	4.2	3.3	3.0	2.2	
Service Such As Barber, Beautician, Practical Nurse, Private Household Worker, Janitor, Waiter	4.2	1.5	6.7	2.4	6.2	5.6	4.3	2.7	4.8	5.9	5.9	3.6	2.7	
Technical Such As Draftsman, Medical or Dental Technician, Computer Programmer	6.7	8.8	4.7	6.6	7.0	6.4	6.5	9.1	7.4	8.4	6.8	7.0	5.1	
Number of Students Answering Question	12364	5830	6444	5936	3431	2776	10118	1051	621	1151	1360	5565	2288	

Source: Fecters, 1975a.

From: The National Longitudinal Study of the High School Class of 1972.

full grown," 13.5% chose "until my children are in school," 6.1% chose "only for a few years," and 38.0% responded "I don't know." Although these data are not fully comparable to the 1968 data discussed above (Jusenius & Sandell, 1974), it appears that the women in 1972 were slightly more realistic in their estimates of labor force participation in later years. The large "I don't know" response, however, leaves this cloudy.

The results of the First Follow-up Questionnaire of the National Longitudinal Study are reported by Fетters (1975b). The First Follow-up Survey data collection began in late October 1973 and extended through April 1974, thus gathering information approximately 1½ years after the participants' graduation. Data on students' long- and short-term career plans are included, organized by male/female responses but not by program (academic, general, vocational). Typical sex role patterns prevail. (See Table 8.5.) Thirteen percent of the females, but only 2% of the males, chose "clerical." Seventeen percent of the males but only 1% of the females chose "craftsman." An extraordinarily high percentage of both sexes (34% male, and 29% female) chose professional careers.

Creech, et al. (1974) report additional analyses of the eight month follow-up study of the National Longitudinal Study of the High School Class of 1972. Findings are reported in tables which plot the interactions of student background, and of future schooling or work. Expectations are compared with actual events 18 months later. Tables are disaggregated by sex or race, but not both. One finding is that proportionately fewer females than males realized plans to become apprentices (17% vs. 33%), but a higher percentage of women (26%) than men (12%) realized or followed up on plans to enroll in a post-secondary vocational program.

In looking at career attitudes of women with a particular level of schooling as well as in a particular region of the country, Walshok (1976a) reports on responses from interviews of California women in working class jobs. Her findings thus far suggest that the experience and aspirations of these women are substantially different from those of working class men as well as of women in middle level and professional occupations. The data reported here emanate from a two-year longitudinal study of California working women. Results of the interviews indicate that the women do not aspire

Table 8.5

COMPARATIVE PROFILES OF CLASS OF 1972 HIGH SCHOOL GRADUATES
1½ YEARS AFTER GRADUATION--MALES VERSUS FEMALES

	Percent giving indicated response		
	All Persons	Sex	
		Male	Female
Expected kind of work when 30 years old			
- Clerical	10	2	13
- Craftsman	9	17	1
- Manager, Administrator	6	10	3
- Professional (excluding public school teacher)	32	34	29
- School teacher (elementary or secondary)	7	4	10
- Technical	5	7	4
- Miscellaneous categories	13	26	8
- Homemaker or housewife only	13	0.1	25
- Not working	1	0.5	2

Source: Fetters, 1975

From: National Longitudinal Study of the High School Class of 1972.

to the status of middle class homemakers. Rather, their paid employment has enabled them to realize many of their personal hopes and needs. They do not participate in homemaking or community and social activities as do middle-class women. Moreover, women in working class jobs are more positive about their employment and have less conflict about it as compared to many middle-class and professional women. There exists a strong economic motivation for these women to seek paid employment, particularly to obtain good paying jobs in nontraditional fields. In addition, their jobs provide them with a challenge and a sense of satisfaction and personal growth that neither their previous routine paid employment nor their past homemaking roles gave them. Fifty percent of the women that have thus far been interviewed are single or divorced and nearly half are minority. While these women have little knowledge about or involvement in the women's movement, they feel that the money earned from their jobs provides them with more independence and allows them to have more control over their lives. The author notes that it is too early at this time to fully state the study's implications; however, she maintains that there are possibly profound implications in what appears to be a significant difference in the feelings men and women have about skilled labor.

In another report, Walshok (1976b) discusses findings from a study involving open-ended interviews with 120 women in nontraditional blue collar jobs in San Francisco, Los Angeles, and San Diego. Results of the study indicate that the respondents' experience in the work place and their exposure to opportunities seem more crucial to the development of vocational interests than advance planning, preparation, and reinforcement from a teacher, parent, or counselor. Those interviewed had always been expected to work at something; all were engaged in odd jobs by the age of 14 and the majority of them had full-time paid employment (because of financial necessity) by the age of 17 or 18. Furthermore, 60% of those interviewed had mothers who worked full time. The author points out that what is distinctive about the initial findings is the respondents' early and continuous sense that they would and must be employed; the specific nature of employment is a secondary concern. More than 50% of the respondents said they had no particular prior interest in nontraditional work. Instead, they indicated that their movement into nontraditional fields was directed by the appearance of a better employment opportunity than what they previously had. The emphasis placed on increased opportunity is reflected by the fact that 80% of the respondents said they were involved in some sort of

vocational school or on-the-job training program, most of which have opened up to women only recently. Findings from the study also indicated that government pressure, including affirmative action, has helped to open up opportunities for women in nontraditional fields. The author concludes that in the general absence of access and opportunity, it is not surprising that very few women pursue fields which are, for the most part, mysterious and inhospitable.

In a study of educational and occupational aspirations, Edingbone, Pettibone, and Heldt (1975) (1975) surveyed Anglo, Indian, and Spanish speaking high school students in central New Mexico. Significant differences in aspirations were found between grade levels (sophomores and seniors only were surveyed) and between ethnic groups. Sophomores were less likely to aspire to professional occupations than seniors. Native Americans were less apt to aspire to professional occupations than Anglo Americans. Differences in occupational expectations were also found to be related to sex, with females less often expecting to obtain professional occupations than males. Occupational goal deflection--the differences between those aspiring to a given occupation and those actually expecting to obtain it--were found to be related to grade level, sex, ethnicity, and the interaction between grade level and ethnicity.

Barnett and Baruch (1974) reviewed the empirical literature concerning occupational and educational aspirations and expectations of American students in grades ranging from pre-school through high school. With regard to sex differences, the major conclusions of the review were:

- 1) Effects of sex were apparent early and were centered around the choice of teacher or nurse by 2/3 of the girls in most samples;
- 2) With regard to age, the level of aspiration rose in males but remained stable in females;
- 3) Black females tended to have very high aspirations and expectations;
- 4) Occupational stereotypes were stable and were shared throughout;
- 5) Girls valued helping others while boys valued status and power;
- 6) Perceptions of occupational prestige was widely shared by both sexes, but unlike boys, girls tended not to choose high prestige occupations.

A number of studies have looked at the factors that influence career choice. Kane, et al. (1976) found that female postsecondary students perceived family members as the most important influence. Mothers, fathers, and husbands were more likely to be mentioned by women in traditional fields than by women in nontraditional fields. With regard to school personnel, both traditional and nontraditional women found teachers more influential than counselors. The number of students mentioning school personnel as influential declined with the age of the student.

The National Longitudinal Study Data (Fetters, 1975a) show that 38.6% of the vocational students thought parents influenced their post-school plans a great deal. Teacher was chosen by 14.7% and guidance counselor by 7.7%. (See Table 8.6.) In determining students' career choice, the vocational students chose "work that seems important or interesting to me" most frequently (74.8%) and "meeting and working with sociable friendly people" next (61.6%). A higher percentage of females than males chose both these answers.

Astin, Harway, and McNamara (1976) report on a survey of high school seniors regarding educational and career plans. Reanalyzing data from the National Longitudinal Study (Fetters, 1975) they found that students perceive themselves as the greatest influence on their plans, parents second, and peers third. This pattern holds for both sexes and all ethnic groups.

Table 8.6

INFLUENCE ON POST HIGH SCHOOL PLANS OF STUDENTS BY SEX,
HIGH SCHOOL PROGRAM, ETHNIC CATEGORY, AND FATHER'S EDUCATION

Response	All Stu- dents	Sex		High School Program			Ethnic Category			Father's Education			
		Male	Female	Acad.	Gen'l.	Voc.	White	Black	Latin- Amer.	Not Known	Not HS Grad.	HS Grad.	Coll. Grad.
How much has each of the following persons influenced your plans for after high school? (Items are in descending sequence by "all students" percentage)													
Weighted percentage of students who answered "a great deal"													
Yourself	91.1	89.0	93.2	95.1	87.9	87.7	91.9	89.9	85.6	83.7	90.1	92.6	94.8
Your parents	43.2	41.8	44.7	46.9	41.7	38.6	41.0	61.4	50.3	46.4	41.0	41.0	49.7
Friends your own age	24.6	21.9	27.1	21.7	27.4	26.1	23.1	34.9	28.7	28.6	25.2	23.6	23.1
An adult not mentioned elsewhere	17.2	14.5	19.9	15.4	18.9	18.3	16.2	24.4	21.8	18.8	18.2	17.1	14.8
A relative other than your parents	14.1	12.6	15.8	13.0	15.4	14.7	12.2	27.2	21.7	17.9	16.8	12.8	10.4
A teacher other than a guidance counselor	10.4	9.3	11.4	11.3	9.0	10.2	9.5	17.6	14.5	11.7	11.1	10.2	8.5
A guidance counselor	8.7	8.7	8.7	9.6	8.2	7.7	7.0	21.2	15.8	12.6	9.8	7.8	6.1
Clergyman (minister, rabbi, etc.)	2.7	2.3	3.1	2.8	3.1	1.9	2.3	5.9	2.6	4.2	2.4	2.4	2.5
The principal or assistant principal	1.4	1.3	1.4	1.1	1.6	1.3	0.9	4.9	2.3	3.1	1.3	1.0	1.0
State employment service officer	1.2	1.3	1.2	0.5	1.8	1.8	0.8	4.4	2.6	3.1	1.3	0.8	0.4
How important was each of the following factors in determining the kind of work you plan to be doing for most of your life? (Items are in descending sequence by "all students" percentage)													
Weighted percentage of students who answered "very important"													
Work that seems important and interesting to me	78.5	75.0	82.1	83.4	74.6	74.8	78.9	77.9	76.9	73.5	76.0	79.5	83.6
Meeting and working with sociable, friendly people	57.4	47.2	67.3	53.8	58.9	61.6	55.9	67.6	64.8	62.2	59.6	56.3	52.8
Freedom to make my own decisions	43.2	46.3	40.1	42.5	44.8	42.5	41.9	51.9	45.3	48.9	41.2	41.1	47.3
Opportunity for promotion and advancement in the long run	41.3	47.6	35.0	35.1	43.5	50.0	39.3	57.7	48.3	47.9	43.7	40.4	35.0
Job security and permanence	40.8	43.8	37.8	35.4	43.8	47.4	39.7	51.3	46.1	44.5	44.4	40.3	33.8
Good income to start or within a few years	31.5	36.3	26.6	24.9	36.2	37.9	29.1	50.1	41.4	39.8	33.9	30.2	24.5
Job openings available in the occupation	28.8	27.4	30.3	24.6	31.7	33.2	27.6	39.0	34.6	34.8	30.5	28.4	22.6
Work matches a hobby interest of mine	25.8	27.7	24.0	26.5	26.7	23.6	25.5	28.0	27.1	26.7	23.7	25.3	29.8
Previous work experience in the area	19.4	19.6	19.4	16.5	19.6	24.5	18.9	22.1	23.3	21.5	20.7	19.2	16.5
Relative or friend in the same line of work	13.4	15.5	11.3	12.6	13.9	14.2	13.4	13.1	14.3	14.6	13.2	13.2	13.3

Source: Fetters, 1975a.

From: The National Longitudinal Study of the High School Class of 1972.

TOPIC NINE: Students' (Male and Female) and Staffs' Satisfaction with Vocational Programs.

Research Question

The major research question under Topic Ten is:

How satisfied with their training programs are men and women of different ethnic backgrounds who participated in traditionally male, female, and mixed vocational education training programs?

Summary

Data on satisfaction must be interpreted very gingerly, especially when dealing with a non-homogeneous population. Satisfaction is related to expectation, and expectations in turn vary with ethnicity, class, sex, and other cultural attributes.

The difficulties in measuring and interpreting indications of satisfaction are apparent in the varying and somewhat contradictory results found in the literature on students' satisfaction with vocational programs. For example, Lewis and Kaltreider (1976) found males more satisfied than females with vocational programs while Walsh and Totten (1976) found the opposite. Feters (1975a) found the satisfaction of both sexes to be about the same.

Review of the Secondary Data

A number of studies have investigated students' satisfaction with their vocational programs. In a study of women enrolled in traditionally* male vocational programs Lewis and Kaltreider, et al. (1976) sampled the opinions of graduates who were one, two, and three years out of the programs. All respondents were from eleven schools with five or more women in traditionally male programs, drawn to include all sections of the United States and all degrees of urbanity.

* Lewis and Kaltreider define a nontraditional student as one who is enrolled in a course not typical for his or her sex. Their labelling of specific courses varied by school, but were mainly determined on the basis of the judgment of local coordinators and past enrollment patterns.

Results of the study show that overall, more than half the males in both traditional (60%) and nontraditional (62%) programs are either "satisfied" or "very satisfied" with their high school program and that more than half the females in traditional (54%) and nontraditional (57%) programs are either "satisfied" or "very satisfied." Also, findings show that males, in both traditional and nontraditional programs are slightly more satisfied than females in both programs. Females in nontraditional programs expressed stronger opinions--both positive and negative--than did females in traditional programs. While 57% of the nontraditional females were either "satisfied" or "very satisfied," compared to only 54% of the traditional females, 22% of the nontraditional females were "dissatisfied" or "very dissatisfied" compared to only 14% of the traditional females. These and other data are reported in the authors' tables below.

Walsh and Breglio (1976) report on an assessment of 30 school-supervised work-education programs. Data are disaggregated separately by sex and race for secondary and postsecondary levels. Students were first surveyed while in school and were then followed up two years later when they were in the labor force.

As the authors' table below indicates, more females than males were satisfied with their jobs, but fewer were satisfied with their cooperative education program. Women did seem to obtain more help in deciding on an occupation, especially at the postsecondary level. Both female and male participants scored higher on most success criteria, at both secondary and postsecondary levels, than did nonparticipants.

The National Longitudinal Study of the High School Class of 1972 (Fetters, 1975), collected data concerning students' satisfaction with their vocational education program. When asked to rate their school's vocational instruction program, 61.9% of all students responded "good" or "excellent." These answers were chosen by 61.3% of the males and 62.5% of the females. Of the vocational/technical students, 69.8% responded "good" or "excellent." These positive responses were chosen more frequently by Whites (62.3%) than by Blacks (58.7%), and were chosen more frequently by Latin Americans (63.4%) than by either of the other ethnic groups.

Table 9.1

FORMER STUDENTS' OVERALL SATISFACTION WITH HIGH SCHOOL
EDUCATION BY SEX AND TRADITIONAL/NONTRADITIONAL ENROLLMENT

Satisfaction Rating	Females		Males	
	% Non-traditional	% Traditional	% Non-traditional	% Traditional
Very satisfied	16	20	17	18
Satisfied	41	34	45	42
Neutral, neither satisfied nor dissatisfied	21	32	31	29
Dissatisfied	18	10	7	9
Very dissatisfied	4	4	0	2
Base Number	95	84	29	126

Source: Lewis and Kaltreider, 1976.

Table 9.2

FORMER STUDENTS' RATINGS OF EFFORTS MADE BY HIGH SCHOOL
"TO GIVE YOU THE PREPARATION YOU NEEDED WHEN YOU LEFT HIGH SCHOOL"
BY SEX AND TRADITIONAL/NONTRADITIONAL ENROLLMENT

Ratings of Effort Made by High School	Females		Males	
	% Non-traditional	% Traditional	% Non-traditional	% Traditional
School tried very hard	16	13	14	16
School tried hard	31	40	38	40
School tried a little	32	26	38	25
School did not try very much	16	16	7	14
School did not try at all	5	5	3	5
Base Number	94	83	29	126

Source: Lewis and Kaltreider, 1976.

Table 9.3

COMPARISONS BETWEEN MALE AND FEMALE PARTICIPATING
AND NONPARTICIPATING STUDENTS IN SELECTED SUCCESS CRITERIA^a
(Percentages)

Success Variables	Total Sample				Males				Females			
	Secondary		Post-secondary		Secondary		Post-secondary		Secondary		Post-secondary	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Job satisfaction	70%	64%	72%	63%	68%	62%	74%	62%	76%	66%	66%	65%
Job responsibility	58	55	67	61	59	55	69	66	58	54	61	57
School satisfaction ^b	46	16	45	18	50	16	51	20	44	9	34	13
Desire job in same area ^c	58	39	72	50	65	38	74	52	58	44	76	54
Program helped de- cide occupation ^d	68	47	52	50	67	45	52	54	73	54	65	48
Would recommend pro- gram to friend ^e	92	61	88	56	93	61	95	58	95	70	84	64

^aKey:

(1) = participating students.

(2) = nonparticipating students.

^bPercentage who responded "liked school better" after enrolling in program (participants) or obtaining job (nonparticipants).

^cPercentage who responded that they wanted a full-time job in same occupational area as their school job.

^dPercentage who responded that the program (participants) or job (nonparticipants) helped them decide on a career.

^ePercentage who would recommend program (participants) or job (nonparticipants) to friends.

Source: Walsh and Breglio, 1976.

Welford W. Wilms (1974) presents findings of a study whose primary concern involves comparing public and proprietary vocational training. However, some data, disaggregated by sex in some instances, and by sex and ethnicity (whites and nonwhites) separately in other instances, are provided for students' satisfaction with their school programs. The authors' table below, showing some of the study's findings, indicates that for students who were trained as both secretaries and clerk-typists, their satisfaction with their training was somewhat lower if they had attended a proprietary school than if they had gone to a public school.

Table 9.4

SECRETARIAL GRADUATES' PERCEPTION OF
ADEQUACY OF TRAINING BY TYPE OF JOB AND TYPE OF SCHOOL

Type of School	Secretary	Clerk-typist
Public	1.58 (34)	1.68 (25)
Proprietary	1.84 (170)	2.22 (101)

Key: 1 = Very satisfied
2 = Somewhat satisfied
3 = Somewhat dissatisfied
4 = Very dissatisfied

Source: Wilms (1974).

In an assessment of vocational education programs for the disadvantaged, Walsh and Totten (1976) present statistical information which was obtained from a probability sample of 90 projects. Data presented on student attitudes toward training ("positive," "negative," or "indifferent") are disaggregated by sex, race (White, Black, Hispanic, all minorities), age, and educational level. There is little reliable information, however, on how the truly disadvantaged are being served by the programs since there is no clear definition of "disadvantaged." The authors report that this term was used so broadly that virtually all students could be diagnosed in some way as disadvantaged. Taking these limitations of the study into consideration, the authors note

that, overall, students rated their training positively. In terms of relative percentages, slightly more females (78.4%) than males (74.2%) rated their training as "positive." Further, a higher percentage of Hispanic students (84.1%) than White (74.4%) or Black Students (76.8%) rated their training as "positive." The authors present this and other data in the following table.

In a study of 25 vocational facilities, in a 13-state Appalachian region, Development Associates, Inc. (1974) interviewed 1,743 people. The data are not stratified by sex and 93% of the respondents were Caucasian, a proportion representative of the ethnic composition of that region. Results showed that 60% of the students felt their training was very helpful or helpful on their first jobs, while 28% said it was not. More postsecondary students indicated their training was helpful than did secondary students.

Table 9.5

STUDENT ATTITUDES TOWARD TRAINING, BY CHARACTERISTICS

Variable	Total		Positive		Attitudes ^a Negative		Indifferent	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	4,096	100.0	3,115	76.0	344	8.4	637	15.6
Sex:								
Male	2,288	100.0	1,698	74.2	222	9.7	368	16.1
Female	1,808	100.0	1,417	78.4	109	6.0	269	14.9
Age:								
Under 16	596	100.0	468	78.5	29	4.9	110	18.5
16-17	1,824	100.0	1,375	75.4	145	7.9	308	16.9
18-19	692	100.0	525	75.9	45	6.5	114	16.5
20-24	284	100.0	239	84.2	14	4.9	28	9.9
Over 24	664	100.0	424	63.9	55	8.3	77	11.6
Race (ethnic background):								
White	2,516	100.0	1,873	74.4	241	9.6	402	16.0
Black	1,200	100.0	921	76.8	85	7.1	194	16.2
Hispanic	296	100.0	249	84.1	13	4.4	34	11.5
All minorities	1,580	100.0	1,242	78.6	103	6.5	235	14.9
Educational level:								
Secondary	3,136	100.0	2,347	74.8	266	8.5	523	16.7
Post-secondary	960	100.0	768	80.0	78	8.1	114	11.9

*Combination of four questions

Source: Walsh and Totten, 1976.

TOPIC TEN: Employers' Satisfaction with Male and Female Employees Who Graduated from Vocational Programs.

Research Question

The major research question under Topic Ten is:

How satisfied are employers with the male and female employees of different ethnic backgrounds who participated in traditionally male, female, and mixed vocational education programs?

Summary

No nationwide data were found on employer satisfaction with vocational graduates, and no data were found reporting results by-sex-by-race/ethnicity of employees. Studies investigating employer satisfaction have been largely local undertakings and have not explored differences by sex or ethnicity.

Examples of the type of information available include a Development Associates study (1974) that found employers in the Appalachian region satisfied with vocational graduates and interested in hiring more, and a study in Milwaukee (Udell, et al., 1977) that found employers seeking additional women and minorities trained in the skilled trades.

Review of the Secondary Data

No nationwide data were found on employer satisfaction with vocational graduates by-sex-by-race/ethnicity of workers. Some local and regional studies have been done of employer satisfaction with vocational graduates in general. For example, Development Associates (1974) questioned employers of students from 25 schools in the 13-state Appalachian region. In general, employers rated vocational graduates the same or better than workers who were not graduates of the vocational schools. More employers (77%) at the secondary school sites than at the postsecondary school sites (66%) believed that vocational school graduates required further training after being hired. While the data show that the schools are only supplying industries with some of the needed manpower, there was general satisfaction among employers with the vocational school graduates that they had hired. Employers also indicated that given the opportunity, they would hire more vocational school graduates.

Other studies have included questions on the demand for women and minorities in the skilled trades. For example, in a study of job satisfactions and dissatisfactions of blue collar workers in the Milwaukee area, Udell, Parke, and Strang (1977) interviewed 12 representatives of companies sponsoring this research. These 12 agreed that federal laws on equal employment opportunities (EEO) and affirmative action "had placed a premium on women and minorities in all skilled trades." All felt that the career prospects for women and minorities who learn a trade look bright. One company complained that a local training college was not producing enough skilled women or minorities who could be hired and thus help Milwaukee industry meet EEO and Affirmative Action standards.

TOPIC ELEVEN: Students', Staffs', and Employers' Opinions about Roles and Responsibilities of Men and Women in the Labor Force.

Research Question

The major research question under Topic Eleven is:

Do male and female students, vocational education staff members, and employers:

- a. Expect male and female students of varying background to work for pay?
- b. Believe that sex discrimination in the labor force is a problem?
- c. Believe that men and women should share equal responsibility to work for pay to support their households?
- d. Believe that men and women should have equal access to all occupations?

Summary

No comprehensive nationwide data were found concerning students', staffs', and employers' opinions about the roles and responsibilities of men and women in the labor force. The limited data available showed that more females (33.2%) than males (18.0%) believed that women should work for pay to help support their households (Fink and Kosecoff, 1976) and that many more men (72.4%) than women (46.7%) believe that certain occupations are not appropriate for women.

Review of the Secondary Data

No comprehensive nationwide data were found concerning students', staffs', and employers' opinions about the roles and responsibilities of men and women in the labor force. Some studies were found that addressed some aspects of the issues.

For example, Fink and Kosecoff (1976) report on the findings of a field test and validation study of Expanding Career Horizons. This is a course of study designed to orient students to the need for women to seek vocational

training in a wide variety of fields and to provide them with some basic information about roles and responsibilities of men and women in the labor force. Five hundred and four students participated in the field test. This sample was geographically stratified to represent urban and rural areas of Illinois and included students from five high schools, two junior high schools, and one secondary level vocational center. In addition, 17 teachers participated in the field testing. While no differences in measures of achievement related to students' sex were found, males and females did differ in terms of their attitude. For example, 93.5% of the male students, but only 46.3% of the female students answered "definitely yes" to the question, "Do you expect to work for pay after marriage?" Similarly, 87.9% of the female students, compared to 20.7% of the male students, definitely expect their spouse to work for pay after marriage. More females (84.3%) than males (73.4%) perceive sex discrimination to be a problem, and more females (33.2%) than males (18.0%) believe that women should always work for pay as well as men. Student responses to selected questions from the total field test sample are presented in the following tables.

Eliason (1977) conducted a study for the American Association of Community and Junior Colleges. Ten community and junior colleges were included in this investigation of how two-year colleges were responding to the increase in female enrollments. Nine attitudinal questions concerning the place of women in the work world and in the family were asked of students. Sixty percent of the respondents agreed that "employment of both parents is necessary to keep up with the cost of living." It was also found that 86.5% of the male students and 94.4% of the female students placed as much stress on finding "interesting work" as on work that pays well.

When asked whether they agreed or disagreed with certain statements about women's roles at home and in the work force, men and women showed several important differences. For example, many more men (72.4%) than women (46.7%) believe that certain occupations are not appropriate for women. Further, 49.7% of the men, but only 28.0% of the women, believed that the husband should be the final authority in the family.

Table 11.1
STUDENTS' OPINIONS ABOUT THEIR ROLES IN LABOR FORCE
BASED ON STUDENTS' REACTION QUESTIONNAIRE
(N=504, Missing Responses Excluded)

			% Definitely Not	% Probably Not	% Probably Yes	% Definitely Yes	No Answer
4a. Do you expect to work for pay before marriage?	Male =		0	1.4	14.0	70.3	14.4
	Female =		0	1.9	21.3	66.8	10.1
	Total =		0	1.6	17.5	69.0	11.9
4b. Do you expect to work for pay after marriage?	Male =		2.3	0.5	2.7	78.4	16.2
	Female =		1.5	6.3	41.4	42.5	8.2
	Total =		1.8	3.8	23.8	58.7	11.9
4c. Do you expect your spouse to work for pay before marriage?	Male =		4.1	15.3	45.5	19.4	15.8
	Female =		.7	1.1	16.4	72.4	9.3
	Total =		2.2	7.5	29.6	48.8	11.9
4d. Do you expect your spouse to work for pay after marriage?	Male =		8.1	21.6	37.4	17.6	15.3
	Female =		.7	1.5	9.0	81.0	7.8
	Total =		4.0	10.5	21.8	52.6	11.1

5. Do you think sex discrimination in the labor force is a problem?

	Male	Female	Total
No, it is not a problem	5.4	3.0	4.0
Yes, but it is not too serious	40.5	36.2	37.7
Yes, it is a serious problem	32.9	48.1	41.3
I'm not sure	17.6	11.6	14.9
No answer	3.6	1.1	2.1

6. At this moment, do men and women have the same opportunity to obtain good, well paying jobs?

	Male	Female	Total
Definitely yes	14.4	8.2	11.3
Probably yes	35.1	34.0	34.5
Probably not	35.1	36.2	35.9
Definitely not	14.4	21.3	17.7
No answer	0.9	0.4	0.6

7. Do you think women should share the responsibility with men for working for pay to support their households?

	Male	Female	Total
Yes, the woman should always work for pay as well as the man	18.0	33.2	26.8
Yes, the woman should work for pay, but only if the household needs the money	44.1	39.9	42.3
No, the woman doesn't have to work for pay, unless she wants to	28.4	23.1	24.8
No, the woman should not work for pay since her main responsibility is to the household	7.7	3.0	5.0
No answer	1.8	0.7	1.1

Source: Fink and Kosecoff, March 1976.

In 300 oral interviews, Eliason learned that most of the women felt that they would survive in their fields because of affirmative action practices, but that they would not receive equal pay or have equal opportunities for advancement. Eliason noted that these responses conflict with those to the question: "Do you anticipate any sex-related employment problems in these areas?" Responses of women to this question are as follows:

	<u>% Yes</u>	<u>% No</u>
(a) Getting hired	17.9	82.1
(b) Receiving fair wages	26.7	73.3
(c) Receiving fair benefits	20.7	79.3
(d) Getting promoted	36.9	63.1
(e) Obtaining union membership	12.6	87.4

Eliason further pointed out that there are some other confusions among these women that should be addressed. For example, when speaking about their school/job experiences, they definitely anticipate sex discrimination in their occupational pursuits, but they seem to be unaware of its specific nature. Some of the findings from the survey are given below.

Table 11.2
EXTENT OF MALE AND FEMALE AGREEMENT ABOUT WOMEN
AT HOME AND IN THE LABOR FORCE

	<u>Generally Agree</u>		<u>Generally Disagree</u>	
	<u>% Male</u>	<u>% Female</u>	<u>% Male</u>	<u>% Female</u>
a. It is more important to receive good wages than to like your job.	13.5	5.6	86.5	94.4
b. A woman's place is in the home, not the office or shop.	20.0	5.1	80.0	94.9
c. Even if I had enough money to live comfortably, I would probably still have a job.	78.0	79.9	22.0	20.1
d. Modern conveniences allow a wife to work and go to school without neglecting her family.	63.0	75.5	37.0	24.5
e. Employment of both parents is necessary to keep up with the cost of living.	60.7	60.4	39.3	39.6
f. The husband should be the final authority in the family.	49.7	28.0	50.3	72.0
g. Certain occupations are not appropriate for women	72.4	46.7	27.6	53.3
h. Men should receive higher wages than women because they have to support families.	20.0	6.6	80.0	93.4
i. Although there is some discrimination against women, any woman can get the job she desires as long as she possesses the necessary qualifications.	67.2	55.6	32.8	44.4

TOPIC TWELVE: Students', Graduates', Staffs', and Employers' Attitudes toward Sex Inequities.

Research Question

The primary research question under Topic Twelve is:

What are the attitudes of male and female students, and graduates, of different ethnic backgrounds at the secondary and postsecondary level, and of vocational education staff members and employers towards sex inequities.

Summary

No national data were found concerning the attitudes of students, graduates, employers, and staff toward sex inequities. Local studies indicate that both students and staff have a low level of awareness of sex inequities in the schools (Mendro, et al., 1976; Holthouse, 1977). Projects designed to increase sex equity report an increase in students' and staffs' awareness of opportunities for students in fields not traditional to their sex (Lerner, 1976; Smith, 1977).

Review of the Secondary Data

No national data were found on students', graduates', staffs', or employers' attitudes toward sex inequities. Some local studies have looked at this issue. For example, Mendro, et al. (1976) discuss findings from a sample of staff and students in the Dallas Independent School District (DISD). A primary purpose of the survey was to determine opinions about the possibility of sex discrimination or the absence thereof in the DISD. The overall analysis of staff responses indicated a general agreement that sex discrimination was not present in the district with the major exception of the athletic program. Other exceptions included some areas in which male favoritism was indicated, such as opportunities for advancement to administrative positions, availability of facilities for extra-curricular activities, and student participation in and selection for occupational education courses. Areas in which female favoritism was perceived included disciplinary procedures, selection of students for choral classes, and standards for school behavior.

Holthouse (1977) reports on the findings of a self-administered evaluation of program effectiveness at Norfolk Technical Vocational Center, Virginia. When asked why some classes have few female and black students enrolled, students indicated strong societal sex role stereotyping as the reason more females do not enroll in courses such as air conditioning, machine shop, and plumbing, and as the reason more males do not enroll in courses such as child care, cosmetology, and practical nursing. When presented with a list of courses and asked to indicate the ones most appropriate for females, 58% of the counselors responded that there was no differentiation. Of the courses that 14 counselors indicated were inappropriate for females, the following were included: welding, auto mechanics, electricity, and carpentry.

Individual projects designed to increase sex equity have reported attitude changes. Lerner (1976) reports on a model recruitment program for females into traditionally male vocational education programs, developed at the University of Houston and administered by Sam Houston High School. An analysis of pre- and posttests showed that after the project was implemented females were more aware of opportunities in nontraditional vocational education courses and in skilled/craft jobs, and that there was more acceptance of women in these nontraditional roles. Also, there was a significant increase in the number of respondents willing to accept women in nontraditional roles, and there were more faculty who felt vocational education students were better prepared for jobs. Further findings showed a 7% decrease in faculty who would discourage female students from taking a traditional male vocational course. In terms of industry, representatives felt industry was committed both to vocational education and to hiring women in skilled/craft jobs. Because of female shortages in some skilled trades, many companies have started training programs specifically designed for women.

Smith (1977) reports on the "New Pioneers" project which dealt with sex inequities in occupational programs. In the course of the study, students', teachers', and vocational program directors' attitudes toward sex inequities were identified. Results suggested that: (1) students in occupational programs were conservative in their thinking; (2) teachers involved in the project's training programs became increasingly aware that many students were receiving conflicting messages about sex roles and needed to talk about the problems; and (3) vocational directors were frustrated by the fact that they felt students' attitudes were formed before they reached vocational classes.

TOPIC THIRTEEN: Staff Awareness of Effective Methods for Reducing Sex Inequities.

Research Questions

The major research questions under Topic Thirteen include:

1. How effective do vocational education staff believe various methods are in reducing sex inequities?
2. How important do vocational education staff believe they are in influencing students' career choices, especially choices to train in nontraditional areas?

Summary

No comprehensive, nationwide data were found on this topic. One national study (Kane, Frazer, and Dee, 1976) found that both teachers and counselors in postsecondary schools believed that the student herself was the most important influence in choice of a nontraditional career. Counselors saw the counselor as next in importance while teachers ranked the teacher second. This seems to imply that while both teachers and counselors would believe that activities to overcome inequities that focused on the student herself are most useful, they might disagree on the relative value of activities focusing on the counselor or the teacher. The students surveyed in this study reported that of educational personnel, males were more influential than females in their choice of a nontraditional career, and that teachers had more influence than counselors.

Review of the Secondary Data

No comprehensive, nationwide data were found concerning staffs' perceptions regarding effective methods for reducing sex inequities. One aspect of this question was investigated by Kane, Frazer, and Dee (1976) in their study of the factors influencing the participation of women in nontraditional occupations in postsecondary area vocational training schools. The study included responses from teachers and counselors in 94 schools in 26 states. Schools were chosen that had 10 or more women students in nontraditional programs. Teachers and counselors were asked "Who usually initiates the idea of a women being trained for a nontraditional occupation?" The most popular response of

both counselors (68.2%) and teachers (62.2%) was the "student herself." However, among counselors the second most popular response was "counselor" (50.0%) and the third choice was "teacher" (25.0%), while among teachers the second most popular response was "teacher" (39.5%) and the third choice was "counselor" (19.3%). Students surveyed in this study reported that they themselves were the most important factor, but ranked male teachers second and counselors third.

These findings suggest that both teachers and counselors would find efforts to overcome sex inequities that focused on the student the most useful, but that counselors would regard efforts involving counseling as next most important, while teachers would favor teacher oriented programs. The following table presents the Kane, Frazer, and Dee data.

In their study of sex stereotyping in vocational education in secondary schools, Lewis and Kaltreider, et al. (1976) found that teachers had few ideas about or awareness of how vocational education could be used to increase the probability of job success for nontraditional students. In terms of perceiving differences between male and female students, the teachers surveyed often cited stereotyped traits and attitudes: females are neater, have purer language, and their presence in class creates sexual attractions which cause problems; males are more mechanically inclined. The teachers did not indicate that they encouraged their students to think and talk about the effects of nontraditional enrollments in their classes. While they generally saw more positive than negative aspects of having females enrolled, this was rarely reflected in the teachers' efforts to increase female enrollment.

Some local, nonstatistical studies have investigated these issues. For example, Healy and Lurd (1975) explore legal options for change in vocational schools in Massachusetts, as perceived by administrators and state board members. Their discussion is useful as theory, but it is unsupported and largely non-statistical. The authors point out that while introducing change in vocational schools depends, to a large degree, on its administration and governing body, administrators generally see themselves as powerless and the governing body as highly fragmented. In discussing obstacles relating to the introduction of significant numbers of girls in vocational schools, the administrators interviewed cited most frequently the attitudes of employers toward female applicants

Table 13.1

EDUCATIONAL PERSONNEL RESPONSE TO QUESTION
 "WHO USUALLY INITIATES THE IDEA OF A WOMAN BEING TRAINED
 FOR A NONTRADITIONAL OCCUPATION?":
 SAMPLE OF SECONDARY AND POSTSECONDARY EDUCATIONAL PERSONNEL,
 UNITED STATES, SPRING 1976

Initiators	Educational personnel response <u>1/</u>		
	(percent)		
	Total	Counselors	Teachers and other personnel
Teacher	35.6	25.0	39.5
Counselor	27.6	50.0	19.3
Other school personnel	4.3	2.3	5.0
Parents	9.2	6.8	10.1
Peers	12.3	13.6	11.8
Student herself	63.8	68.2	62.2
Other	5.5	6.8	5.0
Don't know	7.4	9.1	6.7
	(number)		
	(n=163)	(n=44)	(n=119)
Teacher	58	11	47
Counselor	45	22	23
Other school personnel	7	1	6
Parents	15	3	12
Peers	20	6	14
Student herself	104	30	74
Other	9	3	6
Don't know	12	4	8

1/ Totals are greater than 100% because several identified more than one person.

Source: Kane, Frazer, and Dee, 1976.

in nontraditional jobs, the biases of parents against their daughters entering nontraditional fields, and the absence of adequate changing and toilet facilities in heretofore all male buildings and shops. However, none of these obstacles can be controlled by administrators, or (excepting the toilets) are under the influence of the institution itself. Of the 25 administrators interviewed, only one discussed the issues he faced in getting his faculty to adjust to the presence of women and to behave supportively towards them in programs that had never before enrolled women.

In a report by the Norfolk, Virginia, Public Schools on the Norfolk Technical Vocational Center (NTVC), Holthouse (1977) asked counselors for suggestions to encourage more girls to enroll in specific NTVC courses. Recommendations included the following:

1. To use female students to talk with groups of females in the feeder schools and to explain that it is all right for a female to be in the course;
2. To inform females of the salary differences between traditionally female careers and traditionally male careers;
3. To conduct programs in the regular schools with women who are working in nontraditional careers;
4. To hold programs to reeducate parents as to the appropriate courses for females;
5. To inform females of the actual job markets for them in nontraditional careers;
6. To direct more publicity at females' participation in nontraditional jobs; and
7. To have more females participate in one-day internships in the specified courses at the NTVC.

As a result of analyzing the responses from counselors and students in this study, the Department of Guidance plans to conduct programs for both counselors and students on men and women in nontraditional courses. Holthouse, however, does not feel that such programs will result in proportionately more females being enrolled in courses at NTVC. Holthouse points out that the students'

emphasis upon the importance of societal pressures indicates that the problem of sex stereotyping is a long term one.

The Women's Bureau of the U.S. Department of Labor is currently compiling information on model programs for preparing adult women for employment in non-traditional careers. The resulting document will be based in part on the results of special projects for women in nontraditional jobs funded under the Comprehensive Employment and Training Act, Title III (U.S. Department of Labor, 1977).

TOPIC FOURTEEN: Staffing Patterns in Vocational Education Programs.

Research Question

The major research question included under Topic Fourteen is:

How many vocational educators are there, and what are their characteristics?

Summary

Data on staffing patterns in vocational education by-sex-by-race/ethnicity have not been collected on a regular basis. Some data are available from 1972 (Osso, 1974) and 1974 (Office of Civil Rights, 1974).

A 1972 survey of secondary vocational education programs by the National Center for Education Statistics found that the distribution of teachers among program areas followed traditional sex-role patterns. For example, men were 100% of the teachers in agriculture programs and 89.3% of those in trades/industry, while women were 98.7% of the teachers in home economics and 88.2% of those in health. The study also found that less than 11% of the teachers surveyed were from racial/ethnic minorities.

In 1974 the U.S. Office of Civil Rights, surveyed over 1,000 area vocational technical schools. Only the data from postsecondary schools have been tabulated thus far. The postsecondary staffing data show the same traditional pattern of distribution of the sexes among programs and underrepresentation of minorities discussed above concerning secondary schools.

Review of the Secondary Data

Data on the sex and race/ethnicity of vocational education teachers and administrators have not been part of any continuous data collection efforts. Some data are available from two surveys, one conducted by the U.S. Office of Civil Rights in 1974, and one by the National Center for Education Statistics.

In 1974 the Office of Civil Rights surveyed the enrollment and staffing of over 1,000 area vocational technical schools. Thus far, only the data from postsecondary schools have been tabulated. The teaching and administrative

staffs of the postsecondary area vocational-technical schools were found to be overwhelmingly white and traditional in the distribution of the sexes among programs. The following tables present those data.

The 1972 survey by the National Center for Education Statistics (Osso, 1974) studied the personal and professional characteristics of secondary school teachers in vocational education. This survey was national in scope with approximately 2,600 teachers included in the sample. Data are given by-sex-by-race/ethnicity for the categories American Indians, Blacks, Orientals, Spanish-speaking persons, and others, and are cross-tabulated with teaching areas and age. The study found that male teachers predominate in trades/industry (89.3%), agriculture (100%), technical (89.5%), and distributive education (77.0%), while women teachers predominate in home economics (98.7%), office business (71.8%), and health (88.2%). Cross tabulations by race/ethnicity reveal underrepresentation of minority groups. As the following table shows, teachers classified as belonging to one of the four minority groups totaled less than 11% of the sample.

Kane, Frazer, and Dee (1976) reported the characteristics of educational personnel who were named by female students as being instrumental in their decision to enroll in a nontraditional* vocational program as part of a study of nontraditional students. Ninety-four schools in 26 states were sampled, and response data are given from 860 students in nontraditional programs, 452 students in mixed programs, and 612 students in traditional programs. The study found that educational personnel who were influential tended to be men rather than women, teachers rather than counselors, and from postsecondary schools rather than from secondary schools. The largest single group of influential education personnel named were male vocational education teachers: 63% of all senior high school teachers and 92% of all postsecondary teachers who were identified by nontraditional women as being very influential in their choice of occupational training programs were vocational education teachers, and 94% of all vocational education teachers named were men.

* Kane's definition of nontraditional is a program with nationwide enrollment which is 0-25% female. She defines a traditional program as one with nationwide enrollment which is 75-100% female. A mixed program is one with enrollment which is 25-75% female.

Table 14.1

DISTRIBUTION OF WOMEN TEACHERS AND ADMINISTRATORS
IN POSTSECONDARY AREA VOCATIONAL-TECHNICAL SCHOOLS,
1974, BY ETHNICITY, BY PROGRAM

Program	<u>American Indian</u>		<u>Black</u>		<u>Asian American</u>		<u>Spanish</u>		<u>Other</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Marketing and Distribution	2	4.7	8	1.5	5	3.4	5	5.2	270	3.4
Health	6	14.0	52	9.7	34	23.4	3	3.1	570	7.2
Home Economics	19	44.2	204	38.1	50	34.5	42	43.3	4,163	52.5
Business and Office	11	25.6	163	30.4	40	27.6	31	32.0	1,969	24.8
Technical	1	2.3	29	5.4	7	4.8	1	1.0	427	5.4
Trade and Industrial	4	9.3	79	14.7	9	6.2	15	15.5	486	6.1
Agri-Business	0	0	1	.2	0	0	0	0	47	.6
Total of women in each category	43	100.0*	536	100.0*	145	100.0*	97	100.0*	7,932	100.0*

* Total percentages may not add to 100 due to rounding.

Source: Office of Civil Rights Survey, 1974.

Table 14.2

DISTRIBUTION OF ALL TEACHERS AND ADMINISTRATORS
IN POSTSECONDARY AREA VOCATIONAL-TECHNICAL SCHOOLS,
1974, BY ETHNICITY, BY PROGRAM

Program	American Indian		Black		Asian American		Spanish		Other		Totals	
	No.	% of all teachers	No.	% of all Teachers	No.	% of all teachers	No.	% of all teachers	No.	% of all teachers	No.	% of all teachers
Marketing and Distribution	4	0.3	20	1.6	12	1.0	22	1.8	1,159	95.2	1,217	100.0
Health	7	0.9	65	8.3	34	4.4	4	0.5	671	85.9	781	100.0
Home Economics	22	0.4	225	4.4	58	1.1	52	1.0	4,736	93.0	5,093	100.0
Business and Office	14	0.3	203	4.6	66	1.5	51	1.2	4,074	92.4	4,408	100.0
Technical	7	0.2	83	2.0	49	1.2	41	1.0	3,962	95.7	4,142	100.0
Trade and Industrial	48	0.7	348	4.9	107	1.5	92	1.3	6,457	91.6	7,052	100.0
Agri-Business	5	0.7	6	0.8	4	0.5	10	1.3	732	96.7	757	100.0
Column Totals	107	4.6	950	4.1	330	1.4	272	1.2	21,791	93.0	23,450	100.0
Administrative Staff	72	0.6	843	6.9	113	0.9	269	2.2	10,844	89.3	12,141	100.0

* Total percentages may not add to 100 due to rounding.

Source: Office of Civil Rights Survey, 1974.

Table 14.3

ETHNIC DISTRIBUTION OF VOCATIONAL EDUCATION STAFF,
BY SEX, 1972

	Total		Male		Female	
	No.	%*	No.	%*	No.	%*
American Indian	72	0.1	65	0.1	7	0.01
Black/Negro	9,168	8.4	4,584	8.3	4,584	8.6
Oriental	1,065	1.0	604	1.1	461	0.9
Spanish-Speaking	1,167	1.1	760	1.4	407	0.8
Other	97,233	89.4	45,504	89.2	47,729	89.7
Totals	108,705	100.0	55,517	100.0	53,188	100.0

* Columns may add to more than 100% because of rounding.

Source: Osso, Nicholas A. Vocational Education. Characteristics of Students and Staff, 1972. Washington, D.C.: U.S. Department of Health, Education, and Welfare, National Center for Educational Statistics, 1974.

Kane, Fernandez, and Godoff (1977), in a report on a model to retrain women teachers and skilled women in nontraditional vocational programs, provide data on staffing patterns. In the table below, the authors provide information on the number of women teaching in male-intensive vocational programs, for five states. The data suggest that there exists a vast underrepresentation of women teachers in traditionally male-vocational education programs.

Table 14.4

WOMEN TEACHERS EMPLOYED IN SECONDARY MALE-INTENSIVE
VOCATIONAL EDUCATION PROGRAMS IN FIVE STATES--1976

States	Male-Intensive Programs								
	Trade and Industrial			Agricultural			Industrial Arts		
	Male	Female	Percent Female	Male	Female	Percent Female	Male	Female	Percent Female
MD	392	14	3.5	49	3	5.8	491	81	14.2
NY	2,353	28	1.2	325	8	8.4	9,713	87	0.9
ND	75	0	0.0	88	0	0.0	N/A	N/A	N/A
SC	1,059	3	0.3	450	2	0.4	154	0	0.0
TX	1,623	7	0.4	823	1	0.1	1,767	147	7.7
Total of 5 States	5,502	52	0.9	1,735	14	0.8	12,125	315	2.5

Source: Kane, Roslyn; Fernandez, Laura Chen; and Godoff, Jill Miller.
"A Model to Retrain Women Teachers and Skilled Women as Teachers
in Nontraditional Vocational Programs." Washington, D.C.:
U.S. Office of Education, Bureau of Occupational and Adult
Education, 1977.

TOPIC FIFTEEN: Implementation of Title IX at the State Education Agency Level.

Research Questions

The following are the major research question under Topic Fifteen:

In response to Title IX, have State Educational Agencies:

1. Conducted self-evaluation which have included vocational education?
2. Appointed special personnel; and
3. Established liaison between those responsible for implementation of Title IX and vocational education programs?

Summary

No data were found of sufficient scope and depth to provide a data base on Title IX implementation. Limited surveys have been done of procedural compliance by states (McClure, 1976; Knox, 1977). Findings indicated some lack of compliance. Although most states have conducted self-evaluation, they range greatly in depth and quality and no nationwide analysis exists of these evaluations or of actions taken as a result of them.

Review of the Secondary Data

There have been no comprehensive nationwide studies of Title IX implementation at the state level. There have been, however, a number of attempts to ascertain procedural aspects of compliance. A 1976 survey by the Project on Equal Education Rights (Knox, 1977) found that 80% of the state education agencies were not in compliance with at least one of the five initial procedural requirements. A 1976 telephone survey by the Resource Center on Sex Roles in Education (McCune, 1976) found most states making an effort to comply, and 12 states making exceptional efforts.

Each state is required by the law to conduct a self-evaluation of sex fairness in its activities. A review of a sample of these self-evaluations revealed a broad range of depth and quality. Many reports dealt primarily with employment issues rather than with education programs.

Brief Title IX compliance reviews were conducted by the Office of Education's Bureau of Occupational and Adult Education as part of the regular process of monitoring State Departments of Vocational Education. These yielded findings that most states were in compliance with the procedural requirements. Because the reviews asked different questions in each state, however, results could not be compiled and analyzed on a national basis.

TOPIC SIXTEEN: Implementation of Title IX at the Local Education Agency Level.

Research Questions

The following research questions are under Topic Sixteen:

In response to Title IX, have local education agencies:

1. Conducted self-evaluation studies that included vocational education studies?
2. Appointed special personnel; and
3. Established liaison between the people responsible for its implementation and vocational education programs?

Summary

There is no national data base on Title IX implementation. Anecdotal evidence supports the belief that violations of Title IX requirements are fairly widespread but that, simultaneously, in many schools efforts are being made to overcome past inequities. Relatively few formal complaints have been filed under Title IX, and no separate analysis is available of complaints related to vocational education programs.

Review of Secondary Data

There are no comprehensive, nationwide data on implementation of Title IX at the local education agency level. The following studies touched on relevant issues:

- A 1974 review by the Office for Civil Rights enrollment patterns in area vocational-technical schools revealed 17 schools with single-sex enrollments.
- The National Advisory Council on Women's Educational Programs requested copies of Title IX self-evaluations from large cities' school systems. Many sent their documents for review. The range of depth and quality was enormous. No comprehensive statistical analysis was feasible.

- The Project on Equal Education Rights analyzed the records of the Office of Civil Rights concerning Title IX complaints at the elementary and secondary level (PEER, 1977). They found that in 1976 there were 424 Title IX complaints filed, compared with 212 in 1975, 208 in 1974, and 129 in 1973. The analysis does not separate vocational-education related cases from others.
- A case study approach to Title IX implementation was taken by the Southeastern Public Education Program of the American Friends Service Committee (1977). This group studies the first year of Title IX implementation in Alabama, Mississippi, and South Carolina. The report's section on vocational education, counseling, and employment assistance stated that "the need for affirmative and remedial action in vocational education to overcome the effects of past discrimination was apparent in all the districts monitored." (Southeastern Public Education Program, 1977, 24). Anecdotal accounts from specific schools are presented, ranging from classic instances of sex discrimination, sex bias, and sex stereotyping to efforts to overcome these problems. There was no attempt to develop a statistical data base.

TOPIC SEVENTEEN: Implementation of Sex Fairness Provisions - State Education Agency Level.

Research Questions

The major research questions under Topic Seventeen include:

How has the new vocational education legislation been implemented, especially pertaining to:

- Setting out and implementing plans to assure equal access to vocational education programs for men and women?
- Appointment of and actions by state sex fairness coordinators?
- Reactions to the legislation and actions taken in support of it by vocational educators throughout each of the states?
- Surveys of sex inequity in each of the states, dissemination of the findings, and actions taken in response to the findings?

Summary

No data were available on the nationwide implementation of the law, an unsurprising finding given the short span of time the law has been in effect. A brief overview of State Plans found that most were vague and very general in their descriptions of actions to be taken to overcome sex bias. A survey of attitudes of vocational educators in one state toward the implementation of the law (Dykstra, 1977) found most instructors, local directors, teacher educators, and state staff favorably disposed toward most of the sex equity provisions. However, there was strong opposition expressed toward the \$50,000 set-aside for the sex fairness coordinator, and day care and displaced homemakers programs. Opposition was also expressed toward the funds set-aside for persons of limited English-speaking ability. In general, state staff were more supportive of sex-equity provisions than were the other three groups.

Review of the Secondary Data

Because of the newness of the legislation, little work has been done to measure its implementation. Most of the state plans submitted for the October 1, 1977, deadline discussed sex equity provisions only in broad terms, promising

general compliance. The challenge of generating more specific plans was complicated by the shortage of time, lack of a final regulation from the Department of Health, Education, and Welfare (issued October 3, 1977), and vacancies in the newly created position of sex-fairness coordinator at the state level. Nongovernment groups analyzed two of the state plans. One was found to contain specific details regarding steps to overcome sex bias (Brown, 1977) and the other was found to be lacking such detail (McClure and Taylor, 1977).

Although there were no studies that measured implementation of the law, one study (Dykstra, 1977) investigated the attitude of vocational educators in one state (Colorado) toward implementation of various aspects of the law, including a number of the sex-equity provisions. Vocational instructors, local directors of vocational education, teacher-educators, and state vocational-education staff were surveyed regarding their level of agreement with each of these requirements. Although the reaction was primarily positive, and the vast majority of the respondents from all four groups agreed with the general statement of intent to furnish vocational education opportunities to persons of both sexes, 66% of the instructors and 57% of the local directors disagreed with the provision to set aside \$50,000 for a sex-fairness coordinator at the state level. Thirty-eight percent of the teacher educators and 28% of state staff also disagreed with this provision. A majority of respondents in all four groups disapproved of the provision of day care for children of students at the secondary level. They also disagreed with provisions of vocational education programs for displaced homemakers. Concerning the provision requiring review of the distribution of grants to assure that the needs of women are addressed, 77% of the instructors, 81% of the local directors, and 80% of the state staffs agreed. However, only 55% of the teacher educators thought this was a good idea. In general, the state staffs were the most supportive of the four groups.

Questions were also asked concerning the respondents' attitudes toward the 20% set-aside for the disadvantaged and persons who have limited English-speaking ability. All four groups agreed with the funds set aside for the disadvantaged (70% of the instructors, 82% of the local directors, 74% of the teacher-educators, and 84% of the state staff), but there was less agreement with the special aid to persons of limited English-speaking ability (36% of the instructors, 50% of the local directors, 50% of the teacher-educators, and 60% of the state staff).

TOPIC EIGHTEEN: Implementation of Sex Fairness Provisions - Local Education Agency Level.

Research Question

The major research question under Topic Eighteen is:

To what extent, and in what ways, have local educational agencies responded to the vocational education legislation designed to eliminate sex inequities?

Summary

A number of documents were found that described particular efforts to overcome sex bias in vocational education in a specific location. Many were not directly related to, or sponsored by, local education agencies. No documents were found giving a nationwide overview of the extent to which such efforts are being made at the local level.

Review of the Secondary Data

No nationwide studies of activities to overcome sex bias in vocational education at the local education agency level were uncovered. Numerous reports were found discussing a specific program (Lerner, et al. 1976; Smith, 1977; Jolley, 1977) or reviewing a group of exemplary programs (Maher, 1976; Steiger and Cooper, 1975; Steiger and Stanton, 1976). Information was available on a number of Department of Labor funded programs outside the educational system (Wider Opportunities for Women, 1977; U.S. Department of Labor, 1977). These reviews were all narrative descriptions, however, and do not provide a statistical data base for measuring implementation of the law.

SUGGESTIONS FOR REANALYSIS OF EXISTING DATA

Several data sets that were reviewed in the course of this paper contain information that, if analyzed more extensively, could shed additional light on the topics. Three of the data sets that hold particular promise are the Office of Civil Rights 1974 survey of area vocational-technical schools, the 1976 enrollment data collected by the U.S. Office of Education's Bureau of Occupational and Adult Education, and the data from the National Center for Educational Statistics longitudinal study of the high school class of 1972. Specific reanalysis suggestions are discussed below.

Office of Civil Rights, Student Data

The 1974 OCR data might be analyzed to provide an answer to the research question about characteristics of vocational education students. Specifically, the following analyses involving only cross-tabulations and percentages might be computed.

ANALYSIS #1

Cross-tabulate the number and percent of students enrolled in traditionally male, female, and mixed vocational-technical programs in 1974 by sex, race, and level of schooling.

Sample table:

Occupational Program	American Indian		Black		Asian		Spanish Surnamed		Other	
	M	F	M	F	M	F	M	F	M	F
Traditionally male										
Traditionally female										
Mixed										

ANALYSIS #2

Cross-tabulate the number and percent of students enrolled in vocational-technical programs in 1974 by sex, race, and major program area.

Sample table:

Major Program Area	American Indian		Black		Asian		Spanish Surnamed		Other	
	M	F	M	F	M	F	M	F	M	F
Agri-business										
Marketing and Distribution										
Health Care										
Home Economics										
Business and Office Care										
Trade and Industrial OCC										
Other										

ANALYSIS #3

Cross-tabulate the number and percent of students enrolled in vocational-technical programs in 1974 by level of schooling, sex, and specific program within each major program (e.g., agri-business is divided into 8 specific programs such as agricultural production and agricultural supplies/services.)

ANALYSIS #4

Cross-tabulate the number and percent of students enrolled in apprenticeship training programs in 1974 by sex, race, and level of schooling.

ANALYSIS #5

Cross-tabulate the number and percent of students enrolled in apprenticeship training programs in 1974 by sex, race, level of schooling, and specific program.

Office of Civil Rights, Staff Data

The 1974 OCR data might also be analyzed to provide information about characteristics of vocational education instructional and administrative staff. Specifically, the following analysis involving only cross-tabulations of variables might be computed.

Analysis #1 (Variables to be cross-tabulated for instructional staff.)

- Type of vocational program involvement (agri-business, marketing and distribution, health care, home economics, business and office care, trade and industrial care, trade and industrial OCC, other)
- Type of vocational staff (teaching and administrative)
- Staff person's sex
- Staff person's ethnicity (American Indian, Black, Asian, Spanish surnamed, other)
- State

U.S. Office of Education, 1976 Enrollment Data

The Bureau of Occupational and Adult Education has compiled tables showing the number of students enrolled in vocational programs, by sex. Data are presented for the nation as a whole and for each state. Tabulations appear for each of the eight general categories of programs (i.e., agriculture, distributive education, consumer and homemaking, home economics, health, office, technical, and trades and industry) and, within each category, for each program by instructional code (e.g., blue print reading).

For this paper (Topic Three above) the percentage of female enrollments was calculated for each of the eight general categories, so that comparisons could be made with previous years. However, to really understand what is occurring in terms of cross-sex enrollments, one must see the percentages for the detailed instructional codes. For example, the percentage of females enrolled in the broad category of trades and industry may rise, but be accounted for not by increasing enrollments of females in traditionally male fields but rather by a large jump in the enrollment of females in cosmetology, which happens to fall into this category. It would therefore be extremely useful to have the enrollment data analyzed to show the percentage enrollment of each sex by instructional code, and to compare these data with previous years.

The National Longitudinal Study

The National Longitudinal Study of the Class of 1972 contains, in the base year survey and in the follow-up surveys, data on the sex and race/ethnicity of each subject. However, analyses to date have not cross-tabulated responses by sex and race/ethnicity at the same time. Thus we can tell the number of women who chose clerical careers, or the number of blacks who chose clerical careers, but not the number of black women who chose such careers (e.g., Feters, 1975a). The data tables in the appendices of the base-year survey (Thompson, 1974) display the data by extremely detailed categories (e.g., black women who were in a vocational program whose fathers had less than a high school education) but do not sum the totals by-sex-by-race/ethnicity for each program or for the whole. Valuable information could be gained by providing such cross-tabulations and summaries.

In addition to the basic sex-by-race/ethnicity cross-tabulation, the NLS data provide an opportunity for numerous other detailed analyses that would provide information relevant to this study. For example, the data might be further analyzed to provide more specific information concerning students' satisfaction with their vocational programs. The analysis could cross-tabulate the following variables:

- students' sex
- students' ethnicity
- students' participation in cooperative education and work/study programs
- students' participation in class vocational programs in agriculture, business/office, distributive, health, home economics, and trade/industrial occupations
- region of the country
- students' ratings of the quality of their schools' vocational program.

Additional analyses might provide more specific information about participation in vocational education programs designed for the handicapped or disadvantaged. The NLS data cannot answer this question directly, but an analysis can be made that cross-tabulates the following variables:

- students' sex
- students' ethnicity
- students' participation in cooperative education and work/study programs
- region of the country
- whether the student has a physical disability that could limit the type or amount of his/her work.

It should be noted that the last variable does not specify how handicapped the student is, nor whether the student is in a vocational education program specially designed for the handicapped.

To provide some information concerning the characteristics of students in vocational education programs, the NLS data could be analyzed by cross-tabulating the following variables:

- students' sex
- students' ethnicity
- students' participation in cooperative education and work/study programs
- region of the country
- achievement in school
- parents' income
- fathers' occupation
- mothers' occupation.

The National Longitudinal Study (NLS) data might be further analyzed to provide more specific information about participation in work/study or cooperative education programs specially designed for the handicapped or disadvantaged. The NLS data cannot answer this question directly, but an analysis can be made that cross-tabulates the following variables:

- students' sex
- students' ethnicity
- students' participation in cooperative education and work/study programs
- region of the country
- whether the student has a physical disability that could limit the type or amount of his/her work

Again, it should be noted that the last variable does not specify how handicapped the student is nor whether the student is in a cooperative education or work/study program specially designed for the handicapped.

To obtain further information concerning the characteristics of students in cooperative education and work/study programs, the NLS data could be analyzed by cross-tabulating the following variables:

- students' sex
- students' ethnicity
- students' participation in cooperative education and work/study programs
- region of the country
- achievement in school
- parents' income
- fathers' occupation
- mothers' occupation.

Chapter III
REVIEW OF THE LITERATURE
ON SEX ROLE SOCIALIZATION

Chapter III

REVIEW OF THE LITERATURE ON SEX ROLE SOCIALIZATION

Introduction

To understand the nature and origins of occupational segregation it is necessary to explore both institutional and internalized barriers to educational and occupational aspirations and achievement, particularly those that affect women. One must examine the processes of sex role socialization and sex typing that occur in the wider society and are reinforced by the educational system that mirrors the society. These processes begin long before the child enters school; they begin at infancy and continue through childhood through the influence of a variety of agents of socialization including parents, peers, the mass media, teachers, and counselors. These influences mutually interact and reinforce the sex role socialization process shaping males and females in the culturally defined sex appropriate images, molding achievement motivation, and influencing career choices.

Although men have streamed into the workplace in increasing numbers in the past three decades and a growing percentage of women are now working for pay, the majority of women are employed in a small number of low paying, low status occupations. They earn less income than male workers, and the earnings gap appears to be growing despite changes in the law which prohibit sex discrimination by employers. While unequal pay and occupational segregation have long limited women's occupational options, other factors are involved, as the Bems (1973) note.

Job discrimination is only part of the problem . . . It does not, by itself, help us to understand why so many women "choose" to be secretaries or nurses rather than executives or physicians; why only 3% of 9th grade girls--as compared to 25% of the boys--"choose" careers in science or engineering . . . It certainly does not explain those young women whose vision of the future includes only marriage, children, and living happily ever after; who may at some point "choose" to take a job but who almost never "choose" to pursue a career. Discrimination frustrates choices already made; something more pernicious perverts the motivation to choose.

That "something" is an unconscious ideology about the nature of the female sex; an ideology which constricts the emerging self-image of the female child and the nature of her aspirations from the very first. (p.4)

The basic socialization forces of our society push women into a very restricted vision of their role, including a narrow range of occupations which are considered appropriately "feminine." These beliefs continue to channel women into low status, low pay occupations at a time when changes in the law and in society allow women better opportunities.

This report will review the burgeoning literature on sex discrimination, sex role socialization, achievement motivation and occupational choice to place in a broad perspective the internal and external barriers to women's occupational attainment. It will sketch the disadvantaged position of women in the world of work, explore the socialization processes and sex typing of behavior that begin in the home and are continued by the educational system and all other major societal institutions, examine the consequences of these processes for the achievement motivation and occupational choices of women, and discuss the implications of these processes for the vocational education system.

Because the literature on sex roles and on women's education and work has mushroomed in recent years, a selective review of the data and literature sources was conducted with an emphasis on the material that has appeared in the past decade. For a reader seeking further information there are several reviews of the literature on sex roles and sex differences (Lipman-Blumen and Lickamyer, 1975; Maccoby and Jacklin, 1974; Hochschild, 1973) and bibliographies on sex roles (Astin, et al., 1974; Bickner, 1974; Harmon, 1972; Westervelt and Fixter, 1971; Phelps, et al., 1975; and Women in Nontraditional Occupations--A Bibliography, 1976).

A. Women in the Labor Force

In the past three decades women have greatly expanded their labor force participation. Since 1940, the number of working women has almost tripled, in 1975 reaching 37 million women. Whereas in 1940, 26% of all women of working age were in the labor force, by 1975 their participation rate was 46.4%. Their increased participation in work is expected to continue through the next decade.

While women in all stages of life have altered their work patterns, the most striking change has been the increased labor force participation of married women, particularly those with children. In the 1950s, older married women whose children had grown were drawn into the labor force; in the 1960s and 1970s, the number of working mothers with children under 18 rapidly increased. Between 1970 and 1974 the labor force participation of mothers quintupled. In 1948, 31% of women with children between 6 and 17 were in the labor force; by 1974, the percentage had grown to 54%. Even more striking is the increasing percentage of working mothers with children under 6. In 1948, only 13% of women with children under 6 worked; by 1974 the labor force participation of mothers of preschool children was 36% (1975 Handbook of Women Workers, 1975). A woman with preschool children was more likely to be working in 1972 than was a woman with no children under 18 in 1950.

Several factors appear to have contributed to the trend toward women's increased labor force participation: changes in family patterns, including a fall in the birth rate and a growing number of female-headed households; an increase in the level of education of women; and increased opportunities in the marketplace resulting from anti-discrimination legislation.

Work patterns of women historically have been related to family size. The fewer children a woman had had, the more years she has tended to work outside the home (Sweet, 1973). The birth rate has dropped from 25.3 in 1957, to 14.8 in 1974, meaning that families are becoming smaller. This demographic trend seems to indicate that more women will be spending more years in the labor force in the future.

Also contributing to the increase in female labor participation is the growing number of households headed by a woman. During the 1960s, the number of female headed households rose by 24% to nearly 5.6 million in 1970, while the total number of families was increasing by only 14%. By 1974, 54% of those female heads were in the labor force, whereas the participation rate of all females was 45% (1975 Handbook, 1975).

The increasing level of education of women also contributes to their greater labor force participation. The more education a woman has, the more likely

she is to be employed, and the less likely she is to be unemployed. While 75% of women aged 20-54 with only grade school education have worked at some time in their lives, 90% of high school graduates, 93% of women with some college education, and 96% of female college graduates have worked (Sweet, 1973). The more educated women can generally get better jobs, making employment more attractive to them.

Economists have suggested a variety of reasons for the existing earnings gap, including lower wages paid to women doing the same work as men and the concentration of women in dead-end, low paying jobs. One review of several econometric analyses that attempted to compute the contributions made by the characteristics on which male and female workers differ (such as age, experience, unionization, absenteeism, etc.) found that 33% of the difference was unexplained (i.e., possibly the result of discrimination). Another study which more closely detailed the occupations of men and women found only 12% of the difference unexplained. This finding suggests that the earnings gap is largely a feature of the low paying jobs in which women work rather than unequal pay for the same work (Sawhill, 1974).

The extent of occupational segregation is indicated by the finding that in 1973, more than 40% of all women workers were concentrated in only 10 occupations¹ and about 75% of all women workers were found in only 57 occupations. In 17 of these 57 occupations, women accounted for 90% or more of all employees; in more than half these occupations (31 of 57), women made up 75% or more of all employees. In contrast, male employment showed much less concentration. The 10 largest occupations for men employed less than 20% of all male workers and only 52% of men were employed in the 57 occupations in which most worked (1975 Handbook, 1975).

The percentage of 18 year old females who graduate from high school has increased from 69.8% in 1962-3 to 77.2% in 1972-3 (comparable figures for males were 65.9% and 73.3%, respectively). In 1973, women accounted for nearly 43% of all college students 35 years of age or less, as compared with

¹These were secretary, retail trade salesworker, bookkeeper, private household worker, elementary school teacher, waitress, typist, cashier, sewer and stitcher, and registered nurse.

38% in 1964 (U.S. Department of Labor, Women's Bureau, 1975). Women received 43.5% of all bachelors degrees in 1970-71, (U.S. Department of Labor, Women's Bureau, 1975). The percentage of all women over 25 with four or more years of college education has risen from 5% in 1950, to 9% in 1972. This trend toward more education is expected to continue. The Department of Labor projections indicate that by 1980, 15.3% of women over 25 will be college graduates and that 46.1% of women over 25 will be high school graduates, up from 22.6% in 1950 and 34.1% in 1970 (Manpower Report to the President, 1974).

Female labor force participation also has been stimulated by anti-discrimination legislation and executive branch rules forbidding discriminatory practices that limited women to certain jobs and permitted unequal wages for the same work in the past. The legal supports for women's increased occupational opportunity include the Equal Pay Act of 1963; the Civil Rights Act of 1964, and the 1972 Amendments to the Act; the Guidelines of the Equal Employment Opportunities Commission developed to enforce the Civil Rights Act; Executive Order 11375, which requires all government contracts to include a provision prohibiting contractors from discriminating on the basis of sex; and Title IX of the Educational Amendments of 1972, which bans sex discrimination in any educational program or activity receiving federal funds.

Despite these changes and legal benefits, women still earn significantly less than male workers. The earnings gap, while not fully understood or explained by economists (see Sexton, 1977), is clear: fully employed women earn only about \$6 for every \$10 earned by men, and recently the gap has widened. Whereas fully employed women earned 64% of what men earned in 1955, in 1972 they earned only 58% of what men earned. That year men's median salary was \$10,202; women's was \$4,902. While 51% of male workers earned \$10,000 or more, only 11% of fully employed women earned that much (Sexton, 1977). In every occupational group, women's earnings lagged behind those of men.

Within large occupational groupings there is segregation of women in the lower paying categories as well. For example, while women comprise nearly half of all workers employed in retail trade, they make up only 25% of the workers in wholesale trades, where salaries are generally higher. The result is that men in retail trade earn 65% more than women. In retail merchandising, such

Table 3.1

MEDIAN WAGE OR SALARY INCOME OF FULL-TIME,
YEAR-ROUND WORKERS,¹ BY SEX AND NONFARM
OCCUPATIONAL GROUP, 1972

Occupational Group	Median wage or salary income		Women's median income as percent of men's
	Women	Men	
Professional and technical workers	\$8,796	\$13,029	67.5
Managers and administrators (except farm)	7,306	13,741	53.2
Sales Workers	4,575	11,356	40.3
Clerical workers	6,039	9,656	62.5
Craftsmen and kindred workers	5,731	10,429	55.0
Operatives (including transport)	5,021	8,702	57.7
Service workers (except private household)	4,606	7,762	59.3
Private household workers	2,365	2	
Nonfarm laborers	4,755	7,535	63.1

¹ Persons 14 years of age and over.

² Fewer than 75,000 men.

Source: Prepared by the Women's Bureau from data published by the U.S. Department of Commerce, Bureau of the Census. Current Population Reports, 1973.

as department stores, where average weekly earnings at the beginning of 1973 were only \$82, women made up 2/3 of the sales force (Steele, 1974). Among "professional" workers, women are concentrated in the "semi-professions," such as social work and teaching, which offer less income; men are concentrated in the more lucrative and prestigious "true professions" such as law, medicine, and engineering.

In addition, within the various occupations, wages vary between firms. Blau (1975) found that the higher the wages paid by a firm, the lower the proportion of females employed by that firm.

The financial consequences for women of the disproportionate concentration in the lower job categories and female intensive industries were summarized by Waldman and McEaddy (1974) as follows:

In January 1973, most industries paying average weekly earnings of less than \$100 were female intensive. Several were paying under \$90 a week, while the weekly paycheck for all industries averaged \$138. The average salary for all manufacturing workers was \$159 a week in January, 1973. For those in manufacturing industries that were female intensive, the average was much lower--for example, the apparel industry, in which 81% of the employees were women, paid average weekly salaries of only \$93. (p. 10)

While the education level of women workers has been rising and currently is higher than that of men--12.1 years, on the average, for women in 1973, and 12.0 years for men (1975 Handbook, 1975)--women do not receive as great a financial payoff for their education as men. While women with more education earned more money than those with less education, at every level of education, men earned more income than women with the same education.

In fact, the median income of a man with a high school diploma (\$11,073) is significantly higher than that of a woman with a college diploma (\$8,736). This should not be taken to indicate that it is a waste of time for women to get an education; it should be viewed as a sign that women need a different sort of education than they are now receiving, one that better prepares them to enter the higher paying jobs dominated by men.

Table 3.2

MEDIAN INCOME OF FULL-TIME, YEAR-ROUND WORKERS,¹
BY SEX AND YEARS OF SCHOOL COMPLETED, 1972

Years of school completed	Median Income		Women's median income as percent of men's
	Women	Men	
Elementary school:			
Less than 8 years	\$4,221	\$7,042	59.9
8 years	4,784	8,636	55.4
High school:			
1 to 3 years	5,253	9,462	55.5
4 years	6,166	11,073	55.7
College:			
1 to 3 years	7,020	12,428	56.5
4 years	8,736	14,879	58.7
5 years, or more	11,036	16,877	65.4

¹Persons 25 years of age and over.

Source: Prepared by the Women's Bureau (from data published by the U.S. Department of Commerce, Bureau of the Census. Current Population Reports, 1973.

Support for this statement comes from examination of the earnings of women who have moved into predominantly male occupations. Their incomes are substantially higher than the incomes of women in predominantly female occupations. Most of the top paying jobs for women are in fields that have fewer than 10% female workers (Somers, 1974).

In the decade between 1960 and 1970, women began moving in larger numbers into male dominated fields. Hedges and Bemis (1974) report that almost half a million women were working in the skilled trades in 1970, and that their rate of increase from 1960 to 1970 was twice that of women in all occupations and eight times the rate for men in the skilled trades. The authors attribute this increase to the atmosphere created by the resurgent feminist movement and its social, legal, economic, and psychological consequences. Nevertheless, while women have made some significant gains in some of the male professions and in the skilled trades, their total percentages in these jobs remains very low. For example, between 1960 and 1970, the proportion of women among all employed lawyers increased from 2.4 to 4.7%; among physicians from 7 to 9%; among carpenters from 0.4% to 1.3%; and among machinists from 1.3% to 3.1% (U.S. Department of Labor, Women's Bureau, 1975). In 1974 only 1.6% of all female workers over 16 were employed in crafts and kindred jobs (Roby, 1976).

An examination of the projections of job openings for the next decade makes acceleration of the shift of women into nontraditional occupations imperative. While a growing percentage of the labor force is expected to hold white collar jobs (51.5% in 1980 and 52.9% in 1985 in comparison with 47.8% in 1972), analysts foresee increased competition and crowding because the supply of workers seeking white collar jobs is expected to surpass the increase in the supply of such jobs. This is true in particular for school teachers, the occupation into which most college educated women have gone. Projections also indicate that the areas of the economy where the growth in employment demands will outstrip the expansion of the labor force (i.e., where there will be good employment opportunities for those with training) are the industrial, transportation, and service crafts as well as some of the construction trades (Manpower Report of the President, 1974).

If women are to hold their own or make gains economically, they must look beyond the traditional female occupations and acquire the competencies for which there will be a market. More women must look toward some of the craft and industrial jobs traditionally considered most foreign to "feminine" nature. This will require not only the opening of vocational and other kinds of educational opportunities to prepare them for the job market they will face, but an active effort on the part of educational institutions to put aside and eliminate sex typing in occupational and educational programs and to attract and retain female students and trainees in nontraditional programs. Given the current situation in education, particularly in vocational education, a major change will be required.

The data available on the current preparation of women for entry into the labor market are not encouraging. At all levels, female students are continuing to enter education programs which either do not prepare them for employment at all or which prepare them for work in traditionally female, low-paying jobs.

In 1975, women constituted a little more than half of all vocational education students nationwide (U.S. Office of Education, 1976). Of these, 42.1% were enrolled in homemaking and consumer education courses, most of which were not intended to prepare them for employment. Another 26.0% were enrolled in courses associated with office occupations, and were being prepared for the least desirable positions in the field.²

A recent study (Lewis and Kaltreider, 1976) which attempted to study exemplary secondary schools in which women were enrolled in nontraditional courses was unable to find any schools nationwide with five or more girls enrolled in "hard core" areas, such as auto mechanics, and had to settle for studying

² Women predominated in classes devoted to stenographic, secretarial, and clerical skills; males predominated in courses in business data processing, and supervisory-administrative management (Steiger, 1975). Trade and industrial courses which lead to brighter employment prospects and higher wages were selected by only 5.1% of the females in vocational programs.

11 schools which had girls in "gray area" programs such as printing and TV arts.³

Postsecondary school enrollments of women reflect similar patterns of female concentration in a narrow range of vocational categories leading to lower paying jobs in traditionally female occupations. The women pursuing career training in community colleges, postsecondary technical institutes and area vocational-technical schools (11% of all women in vocational programs nationwide) were clustered in health and public service curricula. For example, 91.6% of the students in health and paramedical technology (including dental hygiene and nursing) were female, whereas only 14% of the students in mechanical and engineering technology programs were female (Steiger and Cooper, 1975).

Women who attend four year colleges similarly tend to restrict themselves to traditionally female career areas. A study of 1,646 women who were juniors and seniors in college found that only 109 (6.54%) of the women were preparing for careers in nontraditional areas such as science, law, government, and computers (Karman, 1973). The Labor Department reported that 36% of all women receiving bachelor degrees in 1971 were in education; only 2.9% majored in business and management, and 0.8% in the physical sciences. Thus, while women received 43.5% of all the bachelor degrees conferred, they earned 74.4% of those in education, 14% in the physical sciences, and 9.3% in business and management. (1975 Handbook, 1975).

While there are bright spots in the overall picture of women in education, particularly the increase in the percentage of women among students of law and medicine, the scene is predominantly discouraging. Adult women are increasingly seeking paid employment, while female students continue to overwhelmingly select--or be steered into--studies that either do not prepare them for paid employment at all or that prepare them to work only at low status, low paying jobs.

³One consequence of this sex based distribution of students in high school vocational programs is that female students receive the short end of the dollar, since expenditures per pupil vary with programs. Girls are found in classes with less favorable teacher-student ratios and in programs whose per pupil expenditures are less (Lewis and Kaltreider, 1976).

B. Sex Role Socialization

Socialization is "the process by which one learns or is taught how to behave in any group or society. It is learning the culture or ways of a group" (Adams, 1975). Sex role socialization includes two processes: learning appropriate sex typed behaviors and learning the cultural sex role stereotypes. Sex typing involves learning the attributes (i.e., personality characteristics, emotional responses, beliefs, and attitudes) and behaviors "appropriate" for males and females in the culture. Sex role socialization thus includes learning the cultural patterns of sex typed "masculine" or "feminine" interests and activities and adapting them as part of the self.

1. Sex Differences, Sex Preferences, and Socialization

There is an extensive literature on sex role socialization which examines the processes by which children acquire sex typed attributes. Much of that literature examines sex differences to determine: (a) if and to what extent sex differences exist and (b) the origins of the differences, particularly the extent to which they result from differences in parental behavior. Hence, there are many investigations of parent/child interaction, parental warmth, verbal interaction patterns, aggression, modes of discipline, responses to child sexuality, and pressure for achievement.⁴ After reviewing 1,600 empirical studies, Maccoby and Jacklin (1974) concluded that while some differences are well established, others are myths, and a third group require investigation. They observed that in general the consistent and/or established differences are far fewer and less significant than had been previously suggested. The differences between the sexes that appear to exist are the greater verbal ability of girls and greater spatial-visual ability, mathematical ability and aggressiveness of boys. Even these findings have been challenged.⁵

⁴There are several extensive reviews of the empirical literature. See Bardwick, 1972; Safilios-Rothschild, et al., 1975; Garai and Schenfeld, 1968; Maccoby, 1966; and Maccoby and Jacklin, 1974.

⁵Since the differences in spatial and mathematical abilities do not appear prior to adolescence, these findings lend support to the view that differences are learned results of differential reinforcement patterns rather than biological in origin. While differences in aggression have been established as early as 2 years, some, including Campbell and Nadelman (1972), suggest that the differences in aggression may be more in expression rather than in the trait itself.

With respect to other alleged sex differences, Maccoby and Jacklin conclude that they are not supported by empirical evidence. They note that from infancy the two sexes show "a remarkable degree of similarity" in the basic intellectual processes of perception, memory and learning; girls are not more social or suggestible than boys; boys are not more analytic than girls. Although boys' achievement motivation appears to be more responsive to competitive arousal than that of girls, it was not found to be higher. With respect to fear, timidity and anxiety, activity level, competitiveness, dominance, and nurturance, the findings are inconsistent and thus require further exploration.⁶

The question of whether the differences are the product of biology (i.e., nature) or socialization (i.e., nurture) has long been asked without a satisfactory answer. It is clear that these two interact to produce many of the differences between the sexes. Some have suggested that there are possible genetic predispositions for behavioral differences that are expressed if socialization and the social setting allow or encourage them. Tresemer (1975) adds that one must also consider the different experiences of biological equipment. Thus, differences in perceptual predispositions of males and females may lead to different experiences of the world and ultimately to different personalities.

Related to the attempts to measure and assess sex differences in young children are studies measuring sexual preference, which is inherently tied to traditional concepts of "masculinity" and

⁶There are a growing number of critiques of the focus on sex differences both on methodological grounds and because such an approach obscures the "real" issues with respect to gender roles and women's social status and thus rationalizes the status quo (Hochschild, 1973; Bernard, 1974; Tresemer, 1975). By looking for sex differences, the enormous variety of attitudes and behavior within each sex and the great overlap between men and women get obscured. Nor do sex differences simply "exist" or "not exist." There is a whole range of size effects, some of which are important, others of which are minor. The bias of social science methodology leads to a tendency to take findings of "no difference" as insignificant but magnifies the importance of any finding of a difference!).

"femininity." Examination of these studies raises many methodological questions and yields little empirically meaningful data. It is clear that children make role perceptions that incorporate sex differentiation and that these differences increase with the age of the child. The measurement of preferences by masculinity-femininity scales, however, "implies a model which assumes that masculinity and femininity are bipolar, unidimensional, continuous, normally distributed variables that are highly important and consistently viewed within the sample population" (Tresemer, 1975, p. 314). Each of these assumptions is questionable and not supported by the evidence.

Theorists disagree on how sex role identity is learned and on the relative importance of cognitive developmental processes and of social learning that occurs through modeling, imitation, and differential reinforcement of behavior (see Lynn, 1959; Kohlberg, 1966; Mischel, 1966; and Garret, et al., 1974). However, certain "facts" are clear. Parents treat boys and girls differently starting at infancy. At an early age, children distinguish between males and females, appropriately label themselves, and know the tools and utensils associated with each sex (Vener and Snyder, 1966). By age five, children have acquired "appropriate" sex role preferences, stereotypic descriptions of the two sexes (Kagan, et al., 1961) and a preference for a future occupation within the usual stereotypes (Schlossberg & Goodman, 1972).

2. Agents of Socialization--The Family

Parents are the first and most important socializers of a child. Maccoby and Jacklin (1974) concluded that "on the whole . . . parents are trying to socialize children of both sexes toward the same major goals but they believe that they are starting from different points, with each sex having a different set of 'natural' abilities and assets." This belief in inherent differences produces a self-fulfilling prophecy. Differential treatment on the basis of assumed differences results in different outcomes "confirming" the belief in these differences.

Parents' differential treatment of boys and girls begins at birth. Parents were found to perceive and describe newborn males and females differently (Rubin, et al., 1974). Although mothers in this study stated that there is no sex difference in the way a six month old child ought to act, they were found to behave differently toward infants on the basis of what they believed the sex of the child to be. Another study found that mothers of six month old girls touched, talked to and handled their daughters more often and more gently than mothers of six month old boys. By the time these children were 13 months, the girls reciprocated their mothers' attention and cooed to and touched their mothers more than the boys (Goldberg and Lewis, 1969). These findings indicate that sex role socialization begins before the child is aware of a sexual identity. Parents wittingly or unwittingly act on the basis of cultural assumptions about what is "natural" for boys and girls, encouraging and reinforcing sex appropriate behaviors. Very young boys and girls respond to the encouragements and rewards for different behaviors, behave differently, and thus reinforce and stimulate further differential treatment on the part of the parents who see the growing differences as "natural."

Other studies have found that parents encourage sex typed interests, give sex typed toys, and discourage inappropriate behavior in pre-school age children (Maccoby and Jacklin, 1974). Influenced by sex role stereotypes and projections of future adult roles for their children, parents' sex-differentiated achievement expectations lead to different rewards and punishments for sons and daughters. Boys are socialized for achievement and competence. Their experience is more intense: they get more independence training (Barry, et al., 1957), more punishment (Droppelman & Shaefer, 1963), and more encouragement to develop intellectual curiosity (Lynn & Sawrey, 1962). Parental love is conditional on achievement and the ability to compete; sex-inappropriate behavior is severely punished with such labels as "sissy."

Daughters tend to get unconditional love regardless of achievement and thus feel less pressure to compete (Block, et al., 1973; Hoffman,

1972). They are permitted and even encouraged to continue early patterns of dependency and often are "overhelped" in ways that interfere with independence and task performance. Some research has shown a specific link between low independence and poor spatial abilities (Diamond, 1976). Dependency prevents emotional separation from parents and inhibits development of internal controls and a sense of separate identity (Bardwick and Douvan, 1972). Parental love for girls is conditional on being neat, obedient, conforming, and helpful; i.e., feminine. The result is that girls' sense of self depends on the appraisal of others and they have greater fear of social rejection than boys.

Parents notice and punish behavior that runs counter to sex role stereotypes more than they do sex-appropriate (but unacceptable) behavior. Thus they perceive and respond differently to vigorous, uninhibited behavior in boys and girls. In boys it is accepted as appropriately masculine; in girls it is seen as aggressiveness, which they seek to suppress (Meyer and Sobiezek, 1972).

Through these different parental rewards and punishments, boys and girls are shaped differently, and the potential of each for maximum growth and adult fulfillment becomes limited. Girls' behavior becomes narrowly constricted within the feminine-appropriate passive and meek range, resting on habits of "learned helplessness." Boys, too, pay a heavy price. They must learn to inhibit dependency, weakness, displays of sensitivity and the expression of emotions which leads to "the tragedy of the inexpressive male" (Balswick and Reck, 1971).

The findings of differences in parental treatment of boys and girls does not necessarily account for sex differences. They do, however, dispel the myth that young children are treated equally and thus suggest that parental behaviors may systematically influence the development and growth of their children in sex differentiated ways.

A number of variables related to patterns of parental sex role socialization require further examination and clarification. Although both mothers and fathers have been found to treat boys and girls differently

(Maccoby and Feldman, 1972), the interaction effects of sex of parent and sex of child have not been clarified. The degree to which parents actually reinforce culturally sex typed behavior and the degree that both parents socialize the same way awaits further research. Many questions remain about the role of the father in the socialization of children. While there is ample literature examining the effect of father absence (Biller, 1970), the father who is present has been largely ignored.

Other important variables that affect the process of sex role socialization that require further research are family structure (i.e., number of children, spacing and sibling configuration), race, and class. One study of family interaction structures (Rosenberg & Sutton-Smith, 1968) found that sex role learning involves not only parent-child effects but child-parent effects. Siblings also affect sex role learning. For example, Brim (1958), reanalyzing data on two-child families, found that children with cross-sex siblings exhibit more traits of the other sex than those with same-sex siblings. This effect was especially strong when the opposite sex sibling was older.

With respect to the effects of race, Ladner (1971) asserts that black girls are encouraged to be more independent than white girls irrespective of class. Black girls tend to identify with the image of "the strong black woman."

The role of social class in the sex typing process is unclear. Many studies report that working class children are more aware of sex role divisions (Hartley, 1960), have more traditional sex role standards than middle class children (Hartley & Hardesty, 1964), and are more strongly pressured to conformity to sex typed behavior than middle class children (Kohn, 1959). Other studies of working class children indicate less rigid lines of sex typed behavior in peer group activities than found among middle class children.

Because most of the research on sex role socialization has been conducted with white middle class children and their parents, the generalizability of the findings of these studies to other groups is problematic.

Few studies have attempted to combine an examination of the effect of the sex of both parent and child with factors of social class and/or ethnicity. Adding further uncertainty to current findings is the question of the degree to which middle class researchers' personal biases or perspectives have led them to overlook social class as a crucial variable or to recognize the fact that different classes may define roles somewhat differently.

3. Other Agents of Socialization

The family is the first and most important agent of socialization of the young child, introducing her or him to the larger world and interpreting it for the child. As the child grows, the direct influence of the family members continues but the impact of the wider community is increasingly free of mediation through the family. The child acquires information, values, and other patterns of behavior through contacts with peers and adults including school personnel, the mass media, and observations of his or her own. Even when no socialization agent is intentionally involved, children interact directly with the environment. They absorb information about norms and values of the social system of which they are a part and develop patterns of responses to it (Hess, 1970). Thus the child becomes an agent of her or his own socialization.

Television is an important influence on the child who begins viewing by age 3 and continues frequent viewing through age 12. The messages the TV transmits reinforce sex typing and present a negative female role model for children. Women on TV rarely have jobs; instead they are seen in family or romantic roles. While males are depicted as dominant, authoritative, and competent, women are shown as passive and second rate (Sternglanz & Serbin, 1974; Women on Words and Images, 1975). Even Sesame Street, a program consciously attempting to eradicate stereotypes and depict wider horizons for minority children, clearly reflects sex role stereotyping (Bergman, 1974).

Another subtle area of socialization is language. English is a masculine language which retains many vestiges of archaic sexual attitudes (Strainchamps, 1972). Lakoff (1975) observes that women experience linguistic discrimination both in the way they are taught to use the

language and in the way that the language treats them. For example, Schneider & Hacker (1973) found that college students interpret the generic term "man" used in many textbooks as meaning "male" rather than "male and female." In high school government texts, the use of masculine terminology is taken by students to exclude women (MacLeod & Silverman, 1973). If this is the perception of relatively sophisticated high school and college students, it is even more likely that younger children believe that our language implies that women are excluded or at least unimportant.

Content analyses of a wide variety of children's books and school texts also indicate strong sex role stereotyping. In preschool award winning story books (Weitzman, et al., 1972), in pleasure reading for elementary school students (Feminists of Children's Literature, 1971), and in elementary, high school, and college texts (Frazier & Sadker, 1973; MacLeod & Silverman, 1973; U'Ren, 1972; Weitzman & Rizzo, 1974; Women on Words and Images, 1972), women are underrepresented and when shown are portrayed in ways that reinforce sex role stereotypes. Boys and men are adventurous, resourceful and successful leaders who show little emotion or concern for their appearance. Women are sociable and kind but timid, uncertain followers and helpers. They capitalize on their appearance rather than their intelligence. Men work at a variety of occupations; women are wives and mothers or professionals such as nurses and teachers. Thus the books neither reflect a broad range of female occupations nor provide adequate female role models for the majority of female students.

One analysis (Women on Words and Images, 1972) of 2,760 stories in 134 children's elementary reading texts found that men were shown in 147 different jobs and women in 26; all of the work done by women in the stories was in traditionally "women's jobs." The texts included biographies of 88 different men compared with those of 17 women, suggesting that the authors perceived few women worth writing about. Stories about boys outnumbered those about girls more than two to one. Boys were almost never shown doing household chores, while girls were shown cooking 33 times and cleaning 27 times. Most important, perhaps, the central figures in stories dealing with ingenuity, creativity, bravery,

adventurousness, achievement, curiosity, autonomy, and self-respect were boys four times as often as they were girls.

Weitzman and Rizzo (1974) found that spelling, math, science, and social studies texts all displayed equally limited images of women. Sex stereotyping was most extreme in science texts, where only 6% of all the pictures included adult women. The authors hypothesize that the presentation of science as a sex typed male endeavor may partially explain how girls are "cooled out" of science.

Pressure from the women's liberation movement has led many publishers to be aware of the sex bias in their publications and to issue guidelines for the elimination of sex stereotyping in new materials. While a recent study found some promising changes in children's picture books (Handler, 1976), publishers still have a long way to go in reversing stereotypic portrayals. Meanwhile, children continue to read or look at the older, inadequate books.

Because the sexism in reading materials and television images is so overwhelming, it is impossible to find children who have not been exposed to such material for comparison or for measurement of the actual effects of such materials. The circumstantial evidence, however, strongly suggests that the consistent exaggeration of the sexist world in the materials presented to children affects their perceptions of the world and their view of their appropriate place in it.

Peers, too, are active agents of socialization, reinforcing the norms of sex role conformity. As early as nursery school, acceptance and approval by peers is gained through sex role conformity, while "deviance" leads to rejection from play activities (Fagot & Patterson, 1969). It appears that sex typing processes get amplified and reinforced among same sex peers so that through interaction a consensus emerges. Girls, who tend to play in small, same-sex cliques, subject each other to greater conformity pressures than boys, who play in the looser, large groups.

Peer pressure increases in adolescence and has strong negative effects on girls' aspirations and achievement. Girls are increasingly concerned with boys' reactions; thus adolescent boys have considerable power to reinforce sex roles, particularly through dating. Boys have more stereotypic views of women's roles than adolescent girls (Entwisle & Greenberger, 1972) and, through dating, influence girls toward more conservative sex role behavior.

Adolescent girls perceive that boys do not like girls who are too intelligent, competent, self-assertive, and competitive. Often girls constrain these behaviors to accommodate boys (Komarovsky, 1946; Rosen & Meixel, 1976). They do this both consciously, by "playing dumb," and unconsciously, by withdrawing from intellectual pursuits, subjects, and activities which are labeled masculine to avoid competition with males. The results include an avoidance of math and science courses in high school (Fennema, 1976), a deceleration in academic progress, and in some cases a decline in IQ (Campbell & McKain, 1974).

C. Sex Role Socialization and Sex Fairness in Education

If a child has not already acquired sex typed behavior and accepted the cultural sex role stereotypes by the time he or she enters school, the educational system lends the considerable authority of the state to the existing pressure to conform to sex role norms and carries on the work of other socializers in reinforcing conformity to sex role stereotypes. Through direct and indirect messages (i.e., incidental learning different from what is stated as the lesson to be taught by the curriculum guide) teachers, counselors, peers, curriculum materials and even the staffing and organization of the schools convey the message to school children that sex role conformity is expected and rewarded while deviance is punished. Boys subtly are told that they must achieve and will be rewarded with leadership while girls are expected to follow.

1. Effects of Teachers' Gender on Students

The scholastic achievement of boys in elementary school has been found to be consistently lower than that of girls. Boys have greater difficulty learning to read and present more frequent disciplinary

problems. Out of concern for these findings, attention recently has focused on the effect of the gender of the teacher and the "feminized" atmosphere of the school on the students. Sexton (1970) argues that boys are at a disadvantage because the elementary school environment is feminine in two respects: (a) most teachers are female; and (b) the schools reward certain conforming and passive behaviors and thus promote feminine values. Most investigators associate feminine values with female teachers without examining the extent to which such values are conducive to the smooth running of any institution, including the schools. Despite evidence that schools tend to reinforce passivity and conformity for both boys and girls to make teachers' work easier, female teachers have often been held responsible for the feminization of the schools. Often, an increase in the number of male elementary school teachers is suggested as the "solution."

A number of studies have been undertaken to assess the effect of the sex of the teacher on scholastic achievement, particularly that of boys. Some studies have examined only the achievement outcomes without examining whether differentials actually exist in male and female teachers' treatment of boys and girls. These studies all consistently found girls' scholastic performance higher than boys' regardless of teachers' sex.

Other studies have explored not only achievement but differentials in the treatment of boys and girls by male and female teachers and their effects on students. One such study (Lee & Wolinsky, 1973), which was conducted in 18 classrooms (kindergarten through second grade), showed that both male and female teachers are generally more approving of boys than girls. There was a strong tendency for teachers to favor children of the same sex in leadership assignments and for male teachers to relate to male typed activities as well as neutral ones while female teachers focused primarily on neutral activities (both avoid female-typed activities). Although overall achievement was not affected by the sex of the teacher, boys were found to strongly perceive themselves as affiliated with the male teacher; girls expressed more or less equal affiliation with male and female teachers.

In a study of male and female teachers in junior high school, Good, et al. (1973) found that male teachers had precisely the same pattern of interaction with male and female students as did female teachers. Other studies (Lee, 1973; Brophy & Good, 1973) found that at the elementary school level, differences in achievement cannot be attributed to the tendency of teachers to favor girls.

Although initially authors expressed concern about the negative consequences of the "feminized" school on boys' achievement, more recently attention has turned to the negative consequences of such an environment for girls. Previously it was assumed that because teachers are feminine and school norms are feminine, girls have an easier time in school, like it, and are rewarded for their performance with good grades. Now some (Lee, 1973; Sadker & Sadker, 1972) argue that while this is true in the short run, such a situation has more important negative consequences for the long term development of girls. They note that the more a girl complies with teachers' demands and is rewarded by the teacher, the more she becomes locked into her sex role and is socialized to habitual modes of behaving that are basically incompatible with independence, creativity, and assertiveness necessary for competent adult functioning. Because girls' achievement becomes conditional upon being approved and liked by a crucial person, when support for achievement is withdrawn, girls' motivation for achievement diminishes. Thus, teachers contribute to the directing of girls toward limited roles which were begun by parents. This is seriously detrimental to girls' long term development.

Boys, on the other hand, face conflicting expectations in school. On the one hand they are told to be aggressive, active, achieving, and independent in order to be masculine. On the other hand, they are expected to be passive, quiet, and conforming in order to be good pupils. As a result they face inner conflicts in school. Boys, however, manage not to devalue themselves even when they do not achieve in school by blaming the teacher and school rules for their academic failure and by seeking alternative avenues of achievement, such as sports.

It appears that what is most important for school children is not whether the teacher is male or female but the negative effects that the "feminine" norms of the educational institutions have on both boys and girls. Boys are affected by having to cope with conflicting expectations; girls are harmed by the extra reinforcement of the feminine socialization already imposed on them.

Questions about the effect of same-sex versus mixed-sex classes have been raised with respect to school achievement. There is some research support for the contention that boys do better in same-sex classes where teachers adapt to the boys' "natural" qualities of intellectual curiosity and higher level of physical activity in the lower primary grades. Interestingly, girls also appear to do better in same-sex classes. They stop playing "little mother" and overpowering boys and get more encouragement from teachers to explore (Kernkamp & Price, 1972). At the junior high school level there do not appear to be significant differences in achievement for boys or girls in same-sex and mixed-sex classes.

2. Teachers' Expectations and Behavior and Student Achievement

Far more important than the sex of the teacher are the differential expectations teachers have of boys and girls, and differences in the manner in which they treat male and female students. In a now classic study, Rosenthal and Jacobson (1968) documented the impact of the self-fulfilling prophecy in the educational context.⁷ The researchers first pretested all the children enrolled in one school. Then they told teachers that certain children--who actually were chosen at random and were no different from the others--were predicted to be intellectual "spurters" or "bloomers." After the first year, a significant expectancy advantage appeared. Forty-seven percent of the children labeled "bloomers" (and who were thus special in the minds of the teachers) gained 20 or more points on IQ tests compared with only 19% of the control children. In addition, "bloomers" were rated

⁷ A self-fulfilling prophecy holds that one person's expectations of another's performance or behavior can determine that performance or behavior.

as more intellectually curious, happier, and less in need of social approval by their teachers. Rosenthal and Jacobson suggest that teachers subtly communicated their expectations of improved performance to the "bloomers" which, in turn, helped the children by altering their self-concepts, motivation, or expectations of themselves. By analogy, teacher expectations that a girl will be passive, docile, and low achieving or that she will be weak in mathematical or analytic skills may contribute to her displaying those characteristics.

What evidence is there that teachers have different expectations of boys and girls or that they treat them differently? Despite statements that they believe in equality for boys and girls in the classroom, Chasen (1974) found that teachers discouraged aggression more often in pre-kindergarten girls than boys and that they directed boys and girls toward sex-typed activities. Boys got more encouragement to play with blocks and do woodwork; girls were encouraged to make collages and play in the doll corner. Both male and female high school math teachers were found to believe that girls can and should achieve less, and the teachers expect less of them (Levine, 1976; Ernest, 1976).

Other studies have also found differences in teachers' behavior toward male and female students. Teachers tend not only to be more critical of boys but to praise them more than girls (Meyer & Thompson, 1956; Jackson & Lahaderne, 1967). They ask boys more questions, praise them more for giving correct answers, and criticize them more for incorrect responses (Brophy & Good, 1970). Thus boys have more interactions with teachers.

One observational study of 7th and 8th grade classrooms that examined both sex and achievement of the student in relation to teachers' behavior (Good, et al., 1973), found that high achieving students were treated more favorably than low achieving students and that high achieving males received most favorable treatment while low achieving boys had poorest contact patterns with their teachers. The low achieving boys received highest rates of criticism, little teacher feedback, and little opportunity to respond in class. The pattern of contact of low achieving girls was not nearly as poor as that of low achieving boys.

Other studies also indicate that teacher response to children depends on the child's socio-economic status and achievement as well as his or her sex. Low status boys appear to receive more criticism than higher status classmates, but low status girls receive more teacher support than higher status classmates (Lippitt & Gold, 1959). Girls who are not high achievers gain social approval by "being nice" whereas boys who do not do well scholastically tend to react to their failure with aggression and thus are doubly unacceptable and punished.

These studies indicate that sex is a very important variable but that it becomes more meaningful in understanding the type of differentiated behavior teachers display if it is considered along with the degree of expectations teachers hold for boys and girls. Low achieving boys, for whom teacher expectations are low, are worst off. They fail to live up to teachers' expectations of adhering to masculine norms of achievement, and additionally cause classroom problems and get punished. Low achieving girls who are not expected to achieve and thus do not go against sex role expectations when they do not achieve, receive support. High achieving boys who conform to the masculine stereotype of achievement are highly favored, while high achieving girls are less rewarded by teachers, who often react to them with ambivalence.

The influence of teacher expectations is not a one-way process. There is evidence of an interaction between teacher behavior and students' sex differentiated behaviors, so that one set of behaviors tends to reinforce the other. In many cases, teachers react to sex differences presented by boys and girls. Particularly in the later grades, boys and girls exhibit different behaviors and accomplishments which create differential expectations and treatment by teachers.

3. Other Reinforcers of Sex Typing in the Schools

Other aspects of the educational system reinforce sex role stereotypes and negatively affect female students' aspirations and achievement. The school authority structure informs students of the differential status of men and women. Children see that while most teachers in the elementary school and many in the secondary school are female, those in the positions of authority and leadership in the schools (i.e., the

principals) are males. While formerly most elementary school principals were females who could provide a model of female authority and achievement for little girls, the female principal is becoming a vanishing breed. In 1928, 55% of the elementary school principals were women; in 1966 only 34% of these principals were female and in 1971, although women comprised 88% of all elementary school teachers, only 22% of elementary school principals were women (Frazier & Sadker, 1973). As one climbs higher on the administrative hierarchy, fewer and fewer women can be found. In 1971 there were only 2 women among 13,000 district superintendents in the United States (Frazier & Sadker, 1973).

School organization affects sex typed behavior. Minuchin (1971) observed that children attending traditional schools exhibited more rigid sex role behavior than children in liberal schools. In the traditional schools much more frequently than in the liberal schools, boys were leaders in problem-solving while girls were followers.

Several studies have found a masculine bias in the content of standardized achievement tests (Donlon, 1971; Donlon, et al., 1976; Tittle, 1974). The bias in favor of male-slanted items may well account for some of the sex differences in achievement, particularly in high school when girls have become more sensitive and aware of what constitutes sex appropriate behavior. The bias is believed to affect girls' scores most strongly on math tests. Donlon (1971) suggests that girls' lower achievement scores in the mathematics section of the Scholastic Aptitude Test would be partially reduced by a change in test items.

In a review of sex discrimination in guidance and counseling, Harway, et al. (1976) concluded that guidance counselors and counseling materials perpetuate and reinforce sex role stereotypes and the sex typing of courses and occupations, thus limiting students' career choices. Several studies suggest that girls get little encouragement from counselors to take "deviant" academic programs or courses. Haven (1971) found that 42% of the girls interested in careers in math or science reported being discouraged rather than encouraged by school counselors from taking advanced math courses. Others found that counselors admitted discouraging girls from taking advanced courses (Casserly,

1975; Luchins, 1976). In a study of students in nontraditional high school vocational education programs, Lewis and Kaltreider (1976) observed that while counselors did not overtly discourage nontraditional enrollments, they did not encourage them. When confronted with girls expressing a desire to enroll in a nontraditional course, counselors reported that they probed to be sure the girls' interests were "serious." Such probing probably discouraged a number of potential nontraditional enrollees.

A study by Thomas and Steward (1971) found that counselors were observed to give less approval to women with nontraditional career goals than those with conforming goals. They perceived those with "inappropriate" career goals as needing further counseling. In another study in which counseling students counseled a coached female client portraying a woman trying to decide between education and engineering as a career, 81% encouraged the female client to choose the female field, with both positive statements about teaching and negative comments about engineering (Schlossberg & Pietrofesa, 1974).

In addition to their outdated attitudes about "appropriate" careers for males and females, many counselors, particularly male counselors, are uninformed or misinformed about the work roles of women. They continue to counsel women into traditional "women's jobs," often basing their advice on limited and outdated materials and on the findings of career guidance tests and accompanying counselor manuals which themselves have been found to be sex biased.

Counselors often use career guidance tests to help students explore their interests and select careers. These tests and their accompanying materials have come under scrutiny recently for sex bias. The finding of pervasive sex bias in the tests has led the National Institute of Education to issue guidelines with respect to sex fairness in the tests, the technical information provided to counselors concerning the tests, and the interpretive materials provided to users of the tests.⁸

⁸ See Diamond (1975) for a thorough discussion of both the theoretical and technical issues related to the construction, use, and effects of career interest inventories.

Career guidance tests are of two basic types: (1) interest inventories such as the Kuder Occupational Interest Survey and the Strong Vocational Interest Blank which compare clients' expressed interests with those of men and women currently employed in various occupations; and (2) instruments such as the Self-Directed Search, which assess clients' responses to questions about their interests in terms of certain empirically determined clusters of responses, each of which is believed to indicate affinity for specific kinds of work or work environments.

The inventories do not measure aptitude or skills; what they purport to tell is whether the respondent possesses the inventoried interests common to those of a certain occupational group (e.g., most physicians like classical music. Does the respondent also like classical music?), or whether he or she enjoys activities related to certain occupational skills.

In addition to questioning the value of these tests in advising anyone, critics point out that the tests are culturally biased and promote the status quo, implying that this is what should be encouraged (Tittle, et al., 1974). For example, few girls have had an opportunity to repair electrical wiring and so rarely will select this as something they like to do. This lowers their scores for many mechanical/technical (i.e., male dominated) jobs, especially if their scores are compared with male scores, regardless of their potential aptitude for such work.

The Strong Vocational Interest Blank (SVIB) illustrates some of the problems with interest inventories. The SVIB contains 400 items covering occupational titles, activities, and amusements. There were, until 1977, different test forms for men and women. These forms differed in the items used, the occupational and interest scales they included, and the scale scores--although some items and scales were found on both forms. The men's SVIB included scales for 33 occupations not listed on the women's form. Several of the occupations found on the female form were of lower status and pay than similar occupations found on the men's form. For example, there was no scale for psychiatrist on the women's form. Women with the pattern of interests that, for men, would indicate psychiatry as a career option, were instead guided

toward nursing or social work. While some counselors still using the old forms now give women both male and female forms, this is costly, time-consuming, and leads to erroneous interpretation (Johannson & Harmon, 1972). The test may be even more biased against minority women and disadvantaged women than it is against majority women (Gump & Rivers, 1975; Harmon, 1970).

The counselor's manual and users' handbook can be further sources of bias. Birk (1975) found that the materials in the manual for the SVIB contained both explicit suggestions and subtle implications that narrowed and limited women's career options. For example, the illustrative case studies portrayed women in stereotypic roles, implying acceptance of the status quo; the masculine pronoun was used throughout; and women were used only infrequently in examples or illustrations, implying that only men's work was worth discussing.

Another bias appears in the inventory instructions which lead women to project onto the test their perceived role expectations rather than answering in ways that disclose their actual ambitions. Farmer and Bohn (1970) administered the SVIB-women to 50 women, first with the standard instructions, then again with instructions to "pretend" that men and women were promoted equally, that family and career can be combined, and that men like intelligent women. The women's scores on the career scales increased dramatically in the latter case, while scores on homemaker scales decreased correspondingly.

In response to the many criticisms of the SVIB, the inventory was revised and retitled the Strong Campbell Interest Inventory (SCII or Unisex Strong) in 1974. It now consists of a single form, but has separate scales for males and females. Reference to gender (except where it is an integral feature of a job title), dated items, and American culture-bound items were eliminated.

The U.S. Department of Health, Education, and Welfare's Office for Civil Rights has ruled that the use of interest inventories with separate sex norms is in compliance with federal law forbidding sex bias, if technical information is provided that demonstrates that the

use of separate norms is essential to the elimination of sex bias, and if the same occupational areas are indicated for each sex. Separate norms may be necessary because of the tendency of males and females in the same occupation to respond differently to some of the items on inventories, reflecting a lifetime of sex role socialization. Since many inventories compare the responses of the people who have taken the inventory with the responses of people in various occupations, one may obtain a more accurate indication of a person's career interests by comparing his or her responses with the responses of people of the same sex in various occupations, than by using cross-sex or combined-sex comparisons. For this technique to be useful for broadening women's career choices, however, the full range of careers must be offered for comparison and the scores must be interpreted in an appropriate, bias-free manner.

Some have suggested that an inventory can and should have single scales for both men and women rather than separate sex-normed scales. The recent development and successful validation of the Unisex ACT Inventory indicates that such an inventory is possible (Hanson, et al., 1977). The development of sex fair inventories, however, does not eliminate questions about their usefulness, particularly in view of observed counselor sex bias in interpreting the test findings.

Other counseling materials, including college catalogues and career guidance materials, have been found to underrepresent and/or stereotype women's occupational roles (Harway et al., 1976; Birk et al., 1975).

4. Barriers to Achievement in Higher Education

Similar patterns of internalized and institutional barriers to women's career achievement operate in higher education, including post-secondary vocational education programs. Because sex typing and pressures to conform to sex role stereotypes have been internalized by the time women arrive at an institution of higher learning, most women opt not to pursue such "unfeminine" courses of study as science, math, and industrial technology. Some are not interested in these subjects; others

discover that due to their lack of preparation in high school, they do not have the prerequisites to take these courses.

While there are virtually no observation studies of classroom interaction between teachers and college students, there is evidence that teachers at this level hold sex differentiated expectations, do not believe that women should enter the professions or other male typed fields, and convey their sex role attitudes to female students to whom they give little encouragement and infrequent sponsorship (Freeman, 1975; Roby, 1972).

Admission policies pose barriers to women. Many colleges and universities have informal quotas for men and women. The result is that to gain admission, the grade point averages and test scores of women have to be higher than those of men. Women with relatively low grades are thus less likely to attend college than men with the same grades (Werts, 1966). Female students are also less likely than males to receive financial aid from the school or financial support from their family if resources are limited.

Prospective students, particularly those who do not enter college immediately after high school, often lack information about post-secondary opportunities. Full-time homemakers who are considering returning to school are less likely to be exposed to recruitment materials or be informed about opportunities than men, who may see such information posted in the workplace. Furthermore, recruitment information and catalogues often are pointedly geared toward attracting male students.

Female students also face problems due to the lack of child care facilities on campus and class schedules that often cause attendance to conflict with family responsibilities.

Upon matriculation, students are greeted by a college counselor or advisor. Many advisors, in the name of "realism," discourage women's intellectual or professional ambitions and steer female students away from "masculine" courses toward more "appropriate" courses of study.

The scarcity of female faculty members who can act as a role model and sponsor for college women is another problem, particularly for women in graduate school and in nontraditional courses of study where there are few female students. The absence of women in administrative and faculty positions serves as a silent but potent message to female students that "aiming too high" would be foolish.

The lack of female role models is compounded for women in nontraditional courses by their social isolation in classes dominated by men. Several studies (Casserly, 1975; Fox, 1974; Kane et al., 1976) report that women's achievement and self-confidence increase and their problems decrease when there are a substantial number of females in a class. While it is uncertain what number constitutes a "critical mass," Kane found that when there were four or more women in a class, a smaller percentage of female students perceived problems in their training. This seems to be the case because "solo" or token individuals face a number of problems: increased performance pressures that arise from their greater visibility; isolation as a result of group boundaries heightening against "outsiders"; and entrapment in stereotypic roles. A token woman cannot just be herself; she is viewed and evaluated as a representative of all women, singled out for attention, frequently reminded of her "differentness," excluded from informal socializing and work related discussions, and tested concerning her determination and commitment (Kanter, 1977).⁹

A number of institutional policies, while nominally applicable to all students, work particularly against female students. Age ceilings, particularly in graduate school programs, disproportionately exclude women who are returning to college to upgrade their skills after raising a family. Similarly, rules which require full-time status, residency on campus, and which limit the transfer of credit from one institution to another, while apparently unrelated to gender, in fact work against women.

⁹Kanter (1977) analyzed the problems of the token woman in a large business organization. Her analysis can be applied to the token woman in an educational setting as well.

In sum, the educational system, from nursery school through graduate programs, continues, reinforces, and enlarges on the sex role socialization and sex typing process begun by parents and fostered by the peer group and mass media. Both teachers and counselors have sex differentiated expectations which they consciously and unconsciously convey to students, shaping their behaviors and aspirations in a myriad of ways. The messages carried by school organization and staffing policies, textbooks, and counseling materials reinforce teachers' sex role expectations. For a small child, the pressures to conform must appear overwhelming. For the young adult, external pressures continue, supplemented by internalized acceptance of sex differentiated attitudes and behaviors.

5. Critique of Literature

Despite the voluminous literature on the educational system and sex role socialization, many questions and research gaps remain. It is unclear to what extent teachers and counselors adhere to traditional sex role ideology and the extent to which their ideology influences their behavior toward students. The extent to which teachers have sex differentiated expectations of boys and girls and the effect of these expectations on student performance also require further exploration. The manner in which teachers' expectations and behaviors and students' expectations and behaviors influence each other is far from fully understood. Studies of classroom interaction, particularly at the high school and college levels, are necessary in order to understand the manner in which the student perceives the world and interprets his or her experience.

Only with the development of non-sexist texts, tests, and curricular materials will it become possible to determine to what degree the attitudes and achievement of children has been affected by past and current sexist materials. In addition, because of the renewed awareness of sex biases throughout the educational system, many programs, projects, and attempts at intervention have recently been undertaken. The effectiveness of these interventions awaits further examination and evaluation.

A major shortcoming of the literature on sex role socialization is its failure to carefully examine the interactions between sex and achievement, social class, ethnicity, and race. The bulk of the research examines white middle class students' experiences. Its generalizability is suspect particularly in light of the findings that teachers respond differently to high and low status boys and girls.

Another shortcoming of the existing research is its failure to examine long term developmental processes. Longitudinal studies of the acquisition of sex typed behavior under a variety of influences and conditions and of the effect of the sex of the teacher on long term development are needed. One of the obstacles confronting research on sex role socialization is the difficulty in establishing control groups for comparison because of the pervasiveness of societal influences.

D. Sex Roles and Career Choice

One facet of the socialization process is the acquisition of attitudes, preferences, knowledge, and skills related to work and one's occupational future. Because the vast majority of adults in our society will work at an occupation, it is important to understand the range of personal and social determinants of one's occupation.

1. Theoretical Approaches to Career Choice

While there are a number of theoretical approaches to occupational choice,¹⁰ none adequately integrates the variety of personal, economic, and social factors that affect career decision making into a developmental theory. A recent theoretical addition is the social learning theory of career decision making which provides a general framework for viewing the process (Mitchell et al., 1975). The theory posits four categories of factors that influence career decision making: (1) genetic endowment and special abilities (including race, sex, physical characteristics, and intelligence); (2) environmental conditions and events (for example, the number and nature of training and

¹⁰ See Roe, 1957; Super, 1959; Ginzberg, 1972; Ginzberg et al, 1951; Holland et al., 1951; Holland, 1973; and Blau et al., 1956.

job opportunities, technological developments, education, and family training experiences); (3) learning through experience and observational learning; and (4) task approach skills (such as a person's work habits, values, perceptual, and cognitive processes). These factors or influencers interact in an infinite variety of ways (which the theory does not explain). They result in: (a) perceptions of one's own performance in relation to the performance of others and to one's past performance; (b) preferences which result from learning experiences and the building blocks of career decisions; and (c) task approach skills; i.e., abilities and predispositions for coping with and interpreting the environment in order to make predictions about the future.

In this theory, career development is viewed as "the sequential cumulative effects of numerous learning experiences affected by various environmental circumstances and the individual's cognitive and emotional reactions to these learning experiences and circumstances that cause a person to make decisions to enroll in a certain educational program or become employed in a particular occupation" (Krumboltz, 1975). Both positive and negative factors influence preferences, career decision-making skills, and entry behavior into education and occupational alternatives.¹¹

Mitchell (1975) finds that the social learning theory does not specifically address the ways in which the career development process for women differs from that of men. Two theories of career development

¹¹ These include: (1) positive reinforcement for participating in activities associated with successful performance of the course or occupation; (2) reinforcement from a role model; (3) exposure to positive words and images associated with a given course of occupation; (4) positive reinforcement for career planning; (5) access to people and resources with necessary occupational information; (6) recent exposure to learning and/or employment opportunities in a given course or occupation; and (7) skills to match the educational and/or occupational requirements. Negative influences include: (1) direct punishment; (2) lack of reinforcement of activity related to occupation; (3) observation of a valued model punished or unreinforced for an activity related to the occupation; (4) the absence of a model or lack of access to information about the occupation; and (5) the high cost of preparation for an occupation in relation to the anticipated reward and/or denial of access to the resources necessary to enter the occupation.

for women (Psathas, 1968 and Zytowski, 1969) attempt to take sex roles and the homemaking aspects of the woman's life cycle into consideration. Unfortunately, their interpretations of the impact of women's life cycle and the social context in which women must function are limited to traditional middle class options (Harway et al., 1976). Their theories rest on the assumption that women do not have "real" motivation for work since marriage and childrearing are their true vocational goals, and therefore women do not need "real" careers.

One examination of the literature on women's work aspirations states, "After more than 30 years of research the question of the formation of occupational aspirations remains virtually pristine" (Laws, 1976, p. 37). It points out a number of common misconceptions about women's work motivation including: (1) the presumption that men work and women do not; (2) that work is a masculine activity and women are excluded from the men's world of work; (3) the myth that women will marry and remain at home so they are relatively indifferent to preparing for and pursuing a career; (4) the myth that the career woman is a freak who needs "explanation"; and (5) the dual myths of "the heroic male professional" and of "female motivational deficit." These latter misconceptions lead researchers to make inappropriate comparisons between all working women and a privileged minority of working men (i.e., those few who are professionals); they obscure the real differences that lead to different motivations and result in "blaming the victims" for their own discrimination. Additional myths include the fallacy that the outcomes that occur in the labor force are the result of women's personal choices and the assumption that work motivation is stable rather than a complex constellation of factors that changes over time. Laws attributes women's lack of passionate vocational interests to their lackluster options which provide little incentive.

2. Early Career Awareness

What is known about the career choice process? It is clear that it begins at an early age.¹² By five years of age, as part of their

¹²For a discussion of the literature on implications of early career awareness see Leifer and Lesser (1976).

socialization, children have formed attitudes and have awareness of the world of work and have opinions about the appropriateness of certain careers. Between 4 and 12 years, awareness of the existence of different occupations and knowledge of the skills required by various occupations increases (Nelson, 1963). As children mature they increasingly project themselves into adult roles, including occupational roles (Kirchner & Vondracek, 1973). Several studies indicate the early development of knowledge of the social consequences of occupations. Children recognize that higher status occupations lead to greater material rewards and know the prestige ranking assigned to adult occupations by the time they are in the third grade (De Fleur, 1963). Their rankings correspond to a high degree with adults' rankings of occupations (Simmons & Rosenberg, 1971). While there is a clear understanding and apparent acceptance of the social hierarchy of occupations, children have limited information about the antecedents and consequences of these occupations or about what people actually do in them.

Young children develop attitudes as well as knowledge about careers. By 5th grade they have well developed work values and interests. A number of studies (Clark, 1967; Looft, 1971; Hewitt, 1975; Siegel, 1973; Kirchner & Vondracek, 1973; and Schlossberg & Goodman, 1972) indicate that children acquire sexual stereotypes, seeing some occupations as "for men" and others "for women," and they adapt their preferences to these stereotypes. Boys consistently select a wider variety of occupations than girls when asked what they expect to do as adults. Girls' early foreclosure of occupational options, however, appears to be related to their understanding of social reality rather than actual narrowed interests. Beuf (1974) found many girls who said that the job they wanted "if they were a boy" was the one they really wanted but knew that they could not aspire to it as a girl. In addition, girls, in viewing the future, focus attention on marriage and family activities. In a study of 5th graders (Iglitzen, 1973), girls stated that they desire various (generally traditional) careers; but in describing a typical day in their future, they described domestic activities, whereas boys focused on careers and jobs. The author concluded that while girls may anticipate a dual

role, they have little awareness of what a career or dual role orientation actually involves. Young girls also underestimate their own abilities and personal qualifications for entering high status occupations. They do not select future occupations on the basis of prestige, as boys were found to do (Barnett, 1973).

Patterns of aspirations for black children appear to differ from those of whites (Clark, 1965). In addition, sex and race interact in complex ways affecting early career awareness (Gump & Rivers, 1975; Clark, 1967; Barnett & Baruch, 1974). Young children of all backgrounds and both sexes are aware of the world of work but perceive it in terms of the stereotyped attitudes toward sex and race prevalent in society.

There are few studies of the nature of shifts in occupational choices that occur in adolescence as children move from fantasy to more realistic decision making. Greater changes in choices were found in boys and girls whose initial choices were sex inappropriate than in those whose choices were sex appropriate. While specific choices appear to be unstable, occupational value hierarchies are relatively stable.

Several studies indicate openness to available occupational alternatives and instability of career goals in adolescents. For example, Angrist (1972) found female college students were flexible in their notions of woman's role and their adult aspirations. Only 15% of the girls in the study had the same aspirations through four years of college; 14% had no aspirations; the other 71% changed majors and/or goals, indicating that intervention could be successful in opening wider options and influencing choices.¹³

¹³ Other studies indicating changing career goals include Astin and Bisconti, 1973; Baird, 1971; Carmody et al., 1972; and Flanagan, 1971.

3. Influences on Career Choices

Examinations of the influences on career choices indicate that individuals are affected by both external influences from parents, peers, school personnel, and the media and internal factors such as personal characteristics, sex role attitudes, self-concept, and achievement motivation.

Many studies indicate that parents directly affect educational and occupational preferences and choices (see Sewell & Shah, 1968a and 1968b; Brown, 1970; Rehberg & Sinclair, 1970; Horner et al., 1967). Other studies of adolescents (Bardwick & Douvan, 1972) describe parent-child relationships and family structures which create substantial differences between adolescent boys and girls in degree of autonomy, independence, self-regulation and assertiveness--all of which are related to occupational achievement. Mothers' work behavior also affects daughters' career attitudes and choices. Women with working mothers were found to be more career oriented than those whose mothers were homemakers, particularly if the mother had a positive attitude toward her work (Tangri, 1972; Hoffman, 1974b).

Peers too affect career choice. In adolescence, girls are particularly vulnerable to the influence of males in general and especially of the significant men in their lives. Men appear to have more traditional attitudes toward women's roles than do other women, which affects the aspirations of some young women. In one study (Entwisle & Greenberger, 1972) 9th grade boys were found to strongly disapprove of women holding "men's jobs." A study of college men (Komarovsky, 1973) found strong ambivalence among men about women's work roles. Girls in nontraditional vocational training courses named male peers as their most frequent critics (Lewis & Kaltreider, 1976).

At the same time, several studies have found that strong support and encouragement from significant males are important factors in the pursuit of a career, particularly for women in nontraditional occupations (Tangri, 1972; Hawley, 1972). Nor do all women share the same perception of men's attitudes. Women preparing for nontraditional careers tend to believe that men make little differentiation between

male and female work roles and behavior; women training for nontraditional occupations tend to believe that men divide work and behavior into male and female categories (Hawley, 1972). Thus nontraditional women perceptually neutralize men's opposition to their occupational choices.

4. Internal Factors: Achievement Motivation and Fear of Success

Internal factors such as personal characteristics, self-concept and achievement motivation also affect work aspirations and choices. These are linked in complex ways and interact with external influences.

Early studies of achievement motivation (McClelland et al., 1953) conceived it as a relatively stable personality disposition, learned early in childhood, to strive for excellence or success. Research on achievement motivation, however, was concerned only with educational and occupational achievement, assuming they were synonymous with success in our society. A later study (Crandall et al., 1965) noted three factors that determine motivation in any given situation: (1) the expectation of success; (2) the value attached to that particular type of achievement; and (3) one's standards of performance.

For many years researchers did not examine female achievement motivation because early findings, based on the assumption that male and female achievement motivation were governed by the same factors, were contradictory and ambiguous. In light of the research void, Horner's (1968, 1969, 1970, 1972) findings that women become anxious about achieving success because they expect negative consequences and thus have a "motive to avoid success" achieved immediate acclaim.¹⁴ While

¹⁴ Horner asked college women to complete the following story: "After first term finals, Anne finds herself at the top of her medical school class." College men responded to "After first term finals John finds himself at the top of his medical school class." Through their stories the women showed strong fear of social rejection as a result of success. Displayed concern about how their femininity and normality would be affected by success, or avoided the conflict between having a career and being a woman by denying the possibility that any woman could be so successful. The men, in contrast, indicated little ambivalence or anxiety concerning the desirability of achievement or success for a male subject. Horner thus postulated a motive to avoid success. The women's anxiety about the anticipated or feared negative consequences of success, Horner hypothesized, thwarts their desire to achieve.

others have criticized her study or sought to specify the conditions under which a motive to avoid success is found,¹⁵ her findings have reopened the question of the meaning of achievement for both men and women and have produced an examination of women's career motivations and aspirations.

The level and direction of achievement motivation in a child are affected by sex role definitions, orientation, and expectations. Sex role orientation may cause an individual to be motivated only to achieve in areas deemed sex appropriate. Stein and Bailey (1973) hypothesized that women are socialized toward different goals but exhibit all the components of the achievement syndrome. They argue that female achievement motivation is not aroused by cues most often used in research so that women's scores on tests of achievement motivation are lower. These suggest that achievement motivation is not the same as occupational aspirations and cannot be measured in these terms.

In a similar vein several studies (Lipman-Blumen, 1975 and Lipman-Blumen & Leavitt, 1976) note that there are two principal ways in which people orient toward achievement. What is usually measured by tests is direct achievement motivation. In addition, an individual may adopt a vicarious achievement orientation by which personal fulfillment is attained through a relationship with another or the activities and qualities of another individual with whom the vicarious achiever identifies. They suggest that there is a continuum of achievement motivation from direct to vicarious. Due to socialization and adherence to a traditional sex role ideology, most women are vicarious achievers; most males direct. Fear of success thus is conceived as avoidance of direct achievement in an occupation or a preference for occupational roles that closely mirror the nurturant roles deemed appropriate for a woman (e.g., secretary, teacher, or stewardess).

¹⁵See Tresemer, 1974; Alper, 1974; Breedlove and Cicirelli, 1974; Levine and Crumoine, 1975.

Research findings support the suggestion that achievement motivation is channeled differently in boys and girls from an early age. Girls do better on tasks defined as feminine or sex appropriate (Milton, 1959; Stein et al., 1971) and as they grow older are increasingly reluctant to directly compete with boys. As they reach adolescence, many girls perceive occupational success as negatively instrumental for marriage, which for a female is the measure of success.

Other studies attempting to further understand the general "fear of success" motive have found that many men, too, display a motive to avoid success. Unlike the women who appear to be concerned with social rejection, however, males question the value of achievement itself (Hoffman, 1974a). In looking at male attitudes toward the success of females, another study (Monahan et al., 1974) found that fear of success in women is directly related to the degree of adherence to conventional sex role stereotypes in both males and females and that boys displayed greater fear of success in women than did girls. Thus, they concluded, studies of "fear of success" actually tap social stereotypes about appropriate achievement for men and women in our society.

Rather than an underlying motive to avoid success, it appears that women's achievement motivation can be better explained in terms of the extent to which they accept sex role stereotypes and the manner in which they solve the perceived achievement-femininity conflict. The women with the most traditional sex role ideology find any kind of achievement but that vicariously achieved through others prohibited. Other women who accept sex role stereotypes making achievement in a male occupation inappropriate find achievement of occupational success in a traditional field or activity and competition with women acceptable. Another smaller group of women reject the traditional sex role ideology and are freer to strive for achievement in any context. Some of these women deal with the conflict by "cognitively feminizing" their work roles (Laws, 1976); others "compensate" for achievement by striving to be incontrovertibly feminine in behavior and appearance; other women hide their accomplishments. And yet other women initially confirm their sense of femininity through marriage, then later in life seek achievement in the workplace.

There appear to be variations in "fear of success" in men and women of different racial and ethnic groups and social classes. For example, black college women seem to fear success less than white female college students (Randall-Puryear & Mednick, 1975).

Lower achievement orientation in females arises from certain child-rearing practices. Girls' dependency is often tolerated and even encouraged by overprotective parents. High academic and occupational achievement is facilitated by a balance between high parental demands for independence and achievement combined with the freedom to explore, and a moderate level of maternal nurturance, warmth, and affection. Such a balance is more often found in boys than girls. High achieving girls are those who have attained a degree of psychological distance from their families and evolved a sense of separateness as a person.

Another factor influencing future expectancies and subsequent achievement striving is the manner in which men and women account for their own success or failure. A person may attribute success or failure to external factors (i.e., luck and task difficulty) or internal factors (effort and ability). Theoretically, maximum self-esteem and striving would be associated with a tendency to make internal attributions for success and external attributions for failure. Males tend to have higher expectations for their own success and when they succeed to attribute it to internal factors. They tend to see their failures, however, as a matter of bad luck. Because luck can change, they are likely to persist in their striving. Women, on the other hand, tend to have lower estimates of their own abilities and often attribute success to external factors but internalize failure as their own fault, which leads to a dampening of striving.

5. An Example of the Complex Interaction of Factors: Women and Mathematics

The complexity and interplay of internal and external factors, influences, and pressures that affect educational and career decisions are

illustrated by the attitude and behavior of female students toward mathematics.¹⁶ While males have been found to have higher achievement test scores than females in math, many researchers believe that the explanation of their superiority rests primarily on social factors. "Women achieve less in math and science . . . partly, if not totally, because that is what society expects and encourages" (Fox, 1976, p. 68).

Diamond (1976), in discussing a number of studies of sex differences in spatial abilities, notes that this sex difference varies by culture, is related to independence, and responds to training. The lower test scores result in part from differences in course taking, which is both a cause and an effect. Lack of accurate information, an absence of female role models, and discouragement from male teachers, lead girls to the incorrect belief that math is not useful to their career interests, which from an early age are restricted to stereotypically "female" occupations.

Pervasive social attitudes and the stereotyping of math as a male domain affect girls' perceptions of themselves as math students and their related behavior. In high school, girls rank themselves lower in math ability than boys. Their perceptions are fostered by: (1) parents who encourage math achievement less in daughters than in sons; (2) math teachers who hold lower expectations of female students than of male students and who interact with them less than with male students; (3) counselors who often discourage girls interested in taking math courses; (4) media and text books which portray math as a male activity; and (5) peers, particularly boys, who even more strongly than girls, label math as "masculine: and girls who are interested in it as "unfeminine."

The harsh penalties for trespassing into the male domain are enough to deter all but the most intrepid girls. Unsupported or discouraged by significant others, unaware of the true relevance of math for careers, sharing social stereotypes of math and their own abilities,

¹⁶For a discussion and extensive bibliography on sex differences and mathematics achievement see Fox, 1976; Fennema, 1976; and Sherman, no date.

seeking to orient their aspirations to their perceptions of what males will accept, girls take fewer math courses in high school. The result of this "math filter" is that women are screened out and screen themselves out, foreclose educational options in college or technical training schools, and eliminate many career possibilities that require some mathematical skills.

E. Critique of Literature and Implications for Vocational Education

Further research is necessary to illuminate the complex process of career decision making and the interplay of the many external and internal factors that affect an individual's attitudes, perceptions, achievement motivation, and self-concept throughout her or his childhood. These factors, in turn, affect occupational preferences, knowledge, and skill development, which lead to actual vocational choices. The theoretical approaches are vague and often lack comprehensiveness; the many empirical studies are unconnected to each other or any theoretical framework.

Both sexist and middle class biases run through the literature on sex role socialization and career decision making. Sexism occurs in the viewing of women's development according to a male model. Writers define "success" and achievement as occupational achievement, then "blame the victim" for lack of motivation and success. They also focus on sex differences (with the implication that different means inferior) and obscure the issues of disparities in options and in social and economic power between the sexes.

In a similar vein, the literature fails to examine career choice processes, work experiences and life style concerns of working class men and women in terms of the particular problems that they face. Such biases are particularly significant for people concerned with vocational education because of the substantial proportion of vocational education students from working class backgrounds. The literature is full of studies that focus on careers (an elite concept associated with the professions implying high levels of work commitment and a graduated course of occupational progression to increasingly responsible positions and higher levels of skills), rather than work histories. These studies generalize about vocational expectations and achievements from examinations of college graduates, although half the

population does not go to college, and far more than half does not complete college. They presume that the college student has higher achievement motivation than those who do not attend college, rather than noting that the working class child's "lack of motivation" may be the result of limited career options. They fail to take account of the realities of working class family life and perspectives on work which have been found to be different from those found in the middle class.¹⁷ Yet how valid are generalizations about aspirations and career choices of college students for youths who do not aspire to the same "professional" occupations?

The blue collar or working class woman and her relationship to the occupational world is conspicuously absent from the existing research literature (see Roby, 1975). It was noted (Walshok, 1976):

The female experience in American society either (1) continues to appear one dimensional with the domestic role defined as primary and concerns related to paid employment seen as contingent; or (2) concerns of working women are defined in class biased terms, with the work roles, career development, and commitments of blue collar women not taken as seriously as those of professional women. The possibility that women may experience marital, work, and community roles differently depending on their socio-economic condition and personal history is one which is only beginning to enter much of the literature on women. (p. 2-3)

Rather than presume that working class women do not have high achievement motivation and career interest (despite the finding that from an early age they expect to work most of their lives), the effect of limited job opportunities and lowered horizons and the meaning of work in their lives need to be explored.

The limitations of the literature notwithstanding, it does have relevance and implications for vocational educators and the system of vocational education. Although students have learned and tend to accept cultural stereotypes regarding sex typing of jobs and personal attributes by the time they enter vocational training, there is much that vocational educators can do to alter the situation. They train students at a critical time in the

¹⁷ See Komarovsky, 1962; Rainwater, et al., 1959; Kohn 1959; Rubin, 1976; for discussions of working class family and socialization patterns, and LeMasters, 1975 for an examination of blue collar workers' perspectives on their lives and work.

development of their personal and occupational identities. They can act to diminish both external and internal barriers that limit occupational choice. But affirmative change policies rather than benign neglect are necessary. Vocational educators cannot assume that opening courses and programs to female students and declaring that sexual equality is the official school policy will undo years of socialization which have led to sex typed interests and skills, self-perceptions and behaviors. An affirmative program to challenge sex typing of occupations and the existing conventional "truths" about sex differences is necessary. This must include: (a) the entry processes; (b) training in school; and (c) placement for the student. It must effect changes in the attitudes and behaviors of administrators, teachers, counselors, and parents as well as students.

The number of women in nontraditional courses in high school and post-secondary training is miniscule; those in "gray areas" or "mixed" courses is low.¹⁸ Is their low enrollment due to the unwillingness of women to enter these courses, or is the problem due to current recruitment and enrollment practices? Indications are that female nontraditional enrollment can be quickly increased with certain policy changes. Girls need more information and encouragement to enter nontraditional programs. Kane et al. (1976) found that a high proportion of women in traditional programs considered entering mixed occupational training (and a smaller percentage considered hard core nontraditional occupations) that they did not ultimately choose. Others have noted that women often do not have a realistic picture of their occupational futures in terms of the number of years they are likely to work or the income they can expect. Lewis and Kaltreider (1976) found that little was done to encourage enrollment in nontraditional high school programs. Women in these programs generally selected the courses themselves; counselors and teachers neither recruited in junior high schools nor encouraged girls to consider or pursue nontraditional courses. In a number of instances counselors discouraged nontraditional enrollment by probing the seriousness of the girls' desire to enroll.

¹⁸ These terms vary but generally refer to occupations or programs in which at least 25% but not more than 75% of the workers or students are female.

A greater effort to teach career awareness in the lower grades, along with active recruitment and encouragement of females into nontraditional programs, might well lead to dramatic changes.

Changes in the training programs themselves are needed to meet the needs of female students also. For example, many nontraditional women felt they lacked adequate backgrounds in the areas for which they were training. This includes both a lack of courses in math and mechanical arts and less informal experience in using tools and related skills. Although high school vocational teachers do not presume any knowledge on the part of the students, the psychological feeling that female students are less prepared than male students (and the reality of different prior experiences from the boys) must be addressed and opportunities to gain self-confidence must be created. For example, making math courses mandatory rather than elective would reduce the effects of "the math filter."

Nontraditional students also face interpersonal problems. Lewis and Kaltreider found that a greater percentage of nontraditional women (20%) than traditional women (8%) perceived their teachers as neutral rather than encouraging. While there is little evidence that teachers teased or discouraged nontraditional students, neutrality may not be enough for students who feel isolated and uncomfortably alone. In a related vein, Kane et al. (1976) found that women in classes in which there were four or more female students were far less likely to have problems than those in classes with fewer women. Initially, it appears advisable to group female students in classes. Once the critical mass of females in nontraditional courses is reached, their problems will diminish and the sex typing of the occupation will decrease.

The findings of several other studies indicate that changes in the relationship of vocational educational institutions and the workplace are needed. Only 1/3 of the female nontraditional students in Lewis and Kaltreider's (1976) study found jobs highly related to their high school vocational training. Wilms (1974) found that only 20% of those students in professional and technical training in post-secondary schools got jobs for which they were trained. The need to tighten the link between school and work is more pressing in the case of women because: (a) they are more likely than men

to face discrimination on the part of employers; and (b) men tend to find jobs through the assistance and information of friends and relatives, more of whom are working males. Women cannot rely as heavily on the "buddy system." They need assistance from their school in finding the job for which they trained.

Eliminating sex bias in vocational education will not be quick or easy. It will require changes in the attitudes and behaviors of school personnel at all levels of the educational system. It will demand a conscious effort to undermine rather than support sex typing and sex role stereotypes held by students, parents, and personnel. It will require alteration in the links between vocational schools and the educational institutions from which students come and between vocational schools and the world of employers. It will call for changes in the training and assignment of teachers, counselors, and other school personnel. It will mean a challenge to the status quo of sex role socialization, the educational system and the position of women in the workplace. Such changes are painful and threatening to many, both men and women. They are necessary, however, if the attainment of equality of opportunity in the workplace is to become a reality for women.

Chapter IV

HISTORY OF LEGISLATIVE PROVISIONS TO ELIMINATE SEX BIAS, SEX DISCRIMINATION, AND SEX STEREOTYPING IN VOCATIONAL EDUCATION

Chapter IV

HISTORY OF LEGISLATIVE PROVISIONS TO ELIMINATE SEX BIAS, SEX DISCRIMINATION, AND SEX STEREOTYPING IN VOCATIONAL EDUCATION

Narrative Overview

On October 12, 1976, President Ford signed the bill that became Public Law 94-482, the Education Amendments of 1976. For women, and for vocational education, it was a landmark event. Title II of the new law contained provisions that for the first time mandated active measures by recipients of federal aid to purge vocational education programs of sex bias, sex discrimination, and sex stereotyping.

The Vocational Education Act of 1963 and its subsequent amendments and revisions had included no such provisions. The first law to address the problem in any significant way was Title IX of the Education Amendments of 1972. But while it banned sex discrimination in federally assisted vocational education programs, its thrust was essentially negative and prohibitory; it did not call for positive steps to make such programs sex-fair. The development of the 1976 law, which does address this need, represents a four-year history of mounting agreement that a significant problem existed and that positive steps were required to remedy it.

One of the first national forums in which the problem was ventilated in some detail was the 1973 hearings on the Women's Educational Equity Act. The evidence of sex discrimination in vocational education described there included the following:

- Students are usually trained in skills on the basis of sex;
- Girls usually have to prove a "sincere interest" before they can take vocational programs usually open to just boys;
- There are usually more classes for males than for females;
- Title IX does not address the need to create programs designed to encourage girls to take traditionally male courses;

- Counselors are not trained to encourage girls to take traditionally male courses.¹

In December 1973, the Women's Bureau of the United States Department of Labor published a leaflet on "Issues in Vocational Training for Women and Girls." Among the areas of major concern mentioned were:

- Women and girls must become acquainted with and motivated toward opportunities in many different vocational fields;
- Inequities must be removed in training opportunities for women and girls in public and private institutions;
- Career preparation and continuing vocational-technical post-secondary education must be opened to those women already employed or in need of retraining prior to returning to the labor market;
- Equal access to and expanded opportunity for vocational training must be provided for women and girls.

In 1974, Congress enacted the Women's Education Equity Act as part of the Education Amendments of that year. Under this provision, grants can be directed to all levels of education, including vocational education, for: development, evaluation, and dissemination of instructional materials; preservice and inservice training for educational personnel; research and development; guidance and counseling activities; educational activities to increase opportunities for adult women; and the expansion and improvement of educational programs and activities for women in vocational education. Thus, this measure represented a small first step toward the sort of action intervention that would be mandated in the 1976 law.

Also in 1974, the House held extensive vocational education hearings, which elicited several references to the importance of eliminating sex stereotyping in vocational education. They included the need to assure equal opportunity for all students, regardless of sex, and to provide increased access to vocational

¹ Hearings on the Women's Educational Equity Act, Subcommittee on Equal Opportunities of the Committee on Education and Labor, House of Representatives, July 25, 26, and September 12 and 13, 1973.

Hearings on the Women's Education Equity Act of 1973, Subcommittee on Education of the Committee on Labor and Public Welfare, United States Senate, October 17 and November 9, 1973.

and technical education by eliminating sex bias in occupational curricula and sex stereotyping in occupational programs. Statements about women included: half of all women workers were employed in only 21 of the more than 250 distinct occupations reviewed in 1969; a large majority of women were enrolled in "women-dominated courses;" and, women as a target group had been neglected in nontraditional occupations.²

HR 17304, introduced on October 11, 1974 by Representative Perkins et al., contained the first references to the equality of sex in any major vocational education bill. These references were that both State and National Advisory Councils should contain appropriate representation of both sexes.

The General Accounting Office (GAO) report entitled "What is the Role of Federal Assistance for Vocational Education" was issued in December 1974.³ The report specified sex as one of the barriers which restricted access to training and employment. It cites as evidence sex-segregated courses, restricted admissions to vocational schools, and vocational interest inventories providing different occupational scores for males and females. The report recommended to the United States Department of Health, Education, and Welfare (HEW) that States be assisted in eliminating barriers which restrict persons from full participation in vocational programs. For instance, it advised HEW to:

. . . implement applicable provisions to Title IX of the Education Amendments of 1972 to eliminate sex discrimination in vocational education, particularly by adopting techniques proved effective in recruiting members of one sex to occupations traditionally considered the prerogative of the other sex.⁴

HEW commented:

We concur in this recommendation and have taken positive steps with the Office of Civil Rights and through Department policy directives to eliminate sex discrimination. Changes in State statistical reporting procedures will be requested to provide data on enrollments by sex in all vocational and technical education programs in Fiscal Year 1975. In addition, we will undertake a study in Fiscal Year 1976 to identify successful recruiting techniques that have resulted in increased enrollments of one sex in occupations traditionally considered the prerogative of the other sex.⁵

²Hearings on the Vocational Education Amendments of 1974, General Subcommittee on Education of the Committee on Education and Labor, House of Representatives, May until August, 1974.

³Comptroller General of the United States. Report to the Congress. "What is the Role of Federal Assistance for Vocational Education?" (MWD-75-31, dated December 11, 1974) Washington, D.C.

⁴Ibid., p. 88.

⁵Ibid., p. 109.

Special Hearings were held on Sex Discrimination and Sex Stereotyping in Vocational Education before the House Subcommittee on Elementary, Secondary, and Vocational Education, March 17 and April 21 and 28, 1975.⁶ The major initiators of these hearings were Representatives Chisholm and Mink. Many issues were raised that were repeated again and again in other hearings and reinforced by information received by Congress.

Key speakers included: Peter Holmes, Director, Office of Civil Rights, HEW; Dr. Jacob Kaufman, Director, Center for Human Resources, Pennsylvania State University; Lois Schiffer and Marcia Greenburger, Center for Law and Social Policy; Raymond Parrot, Executive Director, Massachusetts Advisory Council on Vocational and Technical Education; William F. Pierce, Deputy Commissioner for Occupational and Adult Education, HEW; Corinne Rieder, National Institute of Education; Marilyn Steele, Charles Stewart Mott Foundation; JoAnn Steiger, President, Steiger, Fink, and Kosecoff, Inc.; and Nancy Perlman, Director, Department of Program Development, American Federation of State County Municipal Employees.

Many of the points were repeated during the testimony and statements. They included:

- Vocational education is sensitive to congressional direction, and legislation to eliminate sex bias and sex stereotyping will help eliminate past inequities by providing equal opportunity for job training in all fields for both sexes.
- Educational institutions are a significant mechanism in our society for the general process of socialization and decision making affecting career choices and career motivation.
- Title IX cannot be relied on alone to eliminate sex bias and sex discrimination in vocational education.
- Many adolescents hold outdated beliefs about women and employment.
- Women have always been given prescribed roles, as have men. Attitudes must be changed.
- Women are concentrated in teaching, health, and office occupations in contrast to the broad range of higher paying occupations in which men are distributed.

⁶Hearings on Sex Discrimination and Sex Stereotyping in Vocational Education, Subcommittee on Elementary, Secondary, and Vocational Education of the Committee on Education and Labor, House of Representatives, March 17 and April 21, 28, 1975.

- In 1970, 50 percent of employed women were concentrated in 21 occupations, while 50 percent of employed men were spread through 65 occupations in 1969.
- It is a myth that women work for pin money. Many women who work are heads of households or work to raise the family out of poverty.
- Many programs in technical and heavy trade areas have no women enrolled.
- There are many barriers to admission of students to programs not traditional to their sex.
- Programs in which girls are concentrated are likely to have higher pupil/teacher ratios than programs in which boys are concentrated.
- The educational organization takes the form of a pyramid dominated by men.
- Discrimination against females and sex stereotyping in vocational education are critical factors contributing to the concentration of women in the lower paying jobs.
- New programs designed to change career patterns for women should be developed and implemented.
- Fewer than one-third of our public school districts are making provisions for enrolling pregnant teenagers.
- Policy Boards tend to be dominated by men.
- Policy makers have usually not addressed the needs of women.
- There should be women on policy boards who have expertise in the field of job training and employment.
- Counselors frequently stereotype girls in suggesting traditional occupational roles to them.
- Women need continuing day care centers with flexible hours.
- Instructional materials are often biased and curriculum materials should be developed and designed to help eliminate sex bias in vocational education.
- Research should be supported concerning ways to reduce sex discrimination.
- Teacher insensitivity encourages young women to think only about traditional classes.
- Inservice education is needed to create awareness.
- Incentives should be used to accomplish goals.

Dr. JoAnn Steiger recommended in her testimony that the following provisions should be included in the revision of the Vocational Education Amendments of 1968:

- The Statement of Purpose should state that a major goal of the legislation is to provide vocational education opportunities to both sexes equally.

- State plans should include incentives to encourage elimination of sex bias.
- There should be 100 percent funding of an Office of Women and Work in each State.
- National and State Advisory Councils should have as members "persons familiar with the vocational preparation needs of women and the problems of sex bias and employment and training."
- Consumer and homemaking courses should be designed to attract students of both sexes.
- Statistical data in vocational education should be collected by sex.
- Women should be recruited and trained under the Education Professions Development Act, Part F of the 1968 Amendments.⁷

Testimony and statements before the House Hearings on Vocational and Occupational Education were given before and after the Hearings on Sex Discrimination and Sex Stereotyping in Vocational Education.⁸ Many of the issues already raised were confirmed by further testimony.

Hearings on the Review of Vocational Education Programs, 1975, before the Senate also confirmed the testimony given by the witnesses in the House hearings. All the testimony was given in the witnesses' statements and no questions were asked by the Senators concerning sex bias, sex discrimination, or sex stereotyping.

A task force on women and vocational education legislation was formed to help draft a Women in Vocational Education bill, which was introduced by Senator Mondale on November 3, 1975. This task force was made up of prominent women interested in vocational education for women. Their recommendations for legislation were similar to Dr. Steiger's recommendations given during the Sex Discrimination and Sex Stereotyping in Vocational Education Hearings held before the House. In addition, they recommended that:

- State plans be required to include descriptions of policies and procedures to eliminate sex bias, sex discrimination and sex stereotyping in vocational education;

⁷ Ibid., pp. 32-33

⁸ Hearings on Vocational and Occupational Education, Sub-Committee on Elementary, Secondary, and Vocational Education of the Committee on Education and Labor, House of Representatives. Volume 1, February and March through June, 1975. Volume III, September 1975 through March 1976.

- One hundred thousand dollars be allotted in each State for creation of an office to create awareness of programs and activities for reducing sex stereotyping in vocational education;
- Funds be allotted for research and exemplary programs to overcome sex bias;
- Consumer and Homemaking Education be extended to elementary, secondary, and adult levels;
- Pre- and in-service education courses be instituted to prepare persons to reduce sex bias in all occupational education programs, including homemaking education.

Sex discrimination Regulation Hearings were held before the Subcommittee on Postsecondary Education of the Committee of Education and Labor, U.S. Senate, June 17-26, 1975. Again, witnesses detailed problems of sex stereotyping in vocational education. Women must have skills that are marketable on the open market; counselors track women into stereotyped classes; and, there must be equal access to all classes in vocational education.

In a speech introducing the Women's Vocational Amendments of 1975, Senator Mondale stated:

This legislation would provide a new, much-needed emphasis within the vocational education system, and would aid to eliminate existing barriers to the full participation of both sexes in vocational education programs.⁹

The bill contained provisions for:

- A statement of purpose, including the goal of developing programs in vocational education to overcome sex discrimination and sex stereotyping in all occupations;
- Appointment of members of State and National Advisory Councils who are familiar with problems of women and sex stereotyping in vocational education;
- Vocational guidance and counseling training concerning sex stereotyping and sex discrimination in vocational education;
- Incentives to local education agencies to overcome sex bias, sex discrimination, and sex stereotyping in vocational education;
- Data collection in each state disaggregated by sex;
- Review of the State plan by the Office of Women;
- Priority for grants, programs, and projects designed to reduce sex stereotyping in vocational education.

⁹ Congressional Record. S. 2603. The Women's Vocational Education Amendments of 1975. Vol. 121 No. 161, p. S19004. Monday, November 3, 1975. Washington, D.C.

The Report and Recommendations of the Secretary's Advisory Committee on the Rights and Responsibilities of Women, HEW, entitled The Vocational Preparation of Women, was delivered to the Secretary of Health, Education, and Welfare in November, 1975.¹⁰ This report reviewed the historical background on education and working women, the distorted face of vocational education for women, and underlying problems in vocational education for women.

The Advisory Committee recommended that the Administration's vocational educational bill be amended to include: in the statement of purpose, the provision of equal opportunity for vocational education to both sexes and the elimination of barriers to such equal opportunity; as members on the National and State Advisory Councils, persons familiar with the problems of sex bias and sex stereotyping in training and employment; funds to provide support services for women; in the State Plan, a self-assessment of the state's progress in reducing sex bias and sex stereotyping in vocational education, and objectives for expanding female enrollments in nontraditional programs, so long as such remedial action is necessary; and data disaggregated by sex on enrollment and employment in vocational education, and data kept separately on nongainful home economics programs.¹¹ These recommendations, in slightly revised form were incorporated into the Administration's proposal for the 1976 Amendments. The Committee also recommended that HEW should improve the status of women within the Department and initiate technical assistance to States and other agencies to promote equal opportunities for women.

The Citizen's Advisory Council on the Status of Women's report, Women in 1975, recommended that immediate action be taken through the administration and through legislation to correct inequities so that all vocational education programs become actively open to the enrollment of all students, male and female.¹²

¹⁰ Steiger, J.M. & Cooper, S. Vocational Preparation of Women. A Report of the Secretary's Advisory Committee on the Rights and Responsibilities of Women. Department of Health, Education, and Welfare. Washington, D.C.: U.S. Government Printing Office, 1975.

¹¹ Ibid., pp. 5-6.

¹² Women in 1975. Citizen's Advisory Council on the Status of Women, December, 1975. Washington, D.C.

The National Coalition for Women and Girls in Education¹³ supported S.2603, the Women's Vocational Education Amendments of 1975. A letter dated February 27, 1976, from Margaret Dunkle, Chair, National Coalition for Women and Girls in Education, to Senator Williams, Chairman, Labor and Public Welfare Committee, recommended that he support the bills.

HR 12616 was introduced by Representative Abzug on March 18, 1976. The bill, Women in Vocational Education, authorized appropriations to assist State vocational education programs, under the Vocational Education Act of 1963, to overcome sex discrimination and sex stereotyping. It required balanced representation of both sexes on State and National Advisory Councils, and the inclusion of persons familiar with sex stereotyping in education. It required each State, in order to be eligible for vocational education grants, to assure equal access to such programs by men and women. It also directed that the Commissioner of Vocational Education and State Boards give funding priority to programs to reduce sex stereotyping.

HR 12835 was introduced by Representative Perkins, et al., on March 29, 1976. It contained many of the provisions that had been recommended by women's advocates. In its report¹⁴ describing the measure, the House Committee on Education and Labor concluded that the inferior position of women in the labor market was being reinforced by many of the current practices in vocational education. They also concluded that Federal legislation had to address this problem if it was to be solved.¹⁵

¹³Coalition represents:

American Alliance for Health, Physical Education, and Recreation
American Association of University Women
Federation of Organizations for Professional Women
League of Women Voters of the United States
National Association for Women Deans, Administrators, and Counselors
National Council for Jewish Women
National Federation of Business and Professional Women's Clubs, Inc.
National Student Lobby
National Women's Political Caucus
Women's Equity Action League

¹⁴U.S., Congress, House, Committee on Education and Labor, Report 94-1085, The Vocational Education and National Institute of Education Amendments of 1976. To accompany HR 12835, May 4, 1976, Washington, D.C.: Government Printing Office, 1976.

¹⁵Ibid., p. 21.

On May 10, 1976, Representative Matsunaga asked for consideration of the bill by the House. In summarizing its provisions, he noted:

In addition, the proposed amendments to the Vocational Education Act would eliminate sex bias in vocational education programs by requiring States to establish programs for women who wish to enter occupations traditionally reserved for women. Homemaking education would be restructured to emphasize consumer education and family resource management.¹⁶

On May 11, 1976, the House debated the bill. A number of representatives spoke in support of provisions to curb sex bias and discrimination in vocational education:

- Representative Perkins noted that such provisions in the committee bill resulted from the separate hearings on sex stereotyping and sex discrimination.
- Representative Quie said that the provisions were built on the foundation of the dual role of homemaker and breadwinner for both men and women.
- Representative Meeds reported evidence that vocational education programs showed bias against women.
- Representative Mink was pleased with the amendments adopted by the committee to expand opportunities for women in vocational education and to eliminate sex bias and sex discrimination. She reviewed the provisions of the bill to eliminate sex bias and sex discrimination.
- Representative Abzug commended the committee for addressing problems of sex stereotyping in vocational education programs. She also argued that there should be a separate office created to oversee the elimination of sex stereotyping with funds to see that would be done.
- Representative Buchanan supported the amendments on sex bias, sex stereotyping, and sex discrimination.
- Representative Conte stated that there was sex stereotyping in vocational education as had been determined by the information the Committee had received.
- Representatives Chisholm and Blouin offered an amendment to efforts to reduce sex stereotyping in homemaking courses that led to debate on the merits of that provision. Representative Asbrook

¹⁶ U.S. Congress. Congressional Record. Monday, May 10, 1976. P.H. 4160 Washington, D.C.: U.S. Government Printing Office, 1976.

felt that home economics had been successful and did not need to be changed. Representative Chisholm countered that "women need to learn more than just sewing and cooking and dressmaking in the traditional sense."¹⁷ The Chisholm-Blouin amendment was adopted by voice vote and found its way, verbatim, into the final bill.

HR 12835 passes on May 11, 1976 by a vote of 390-3.

On May 13, 1976, the Senate Committee Report 94-882 was ordered to be printed. S 2657 contained many of the same provisions to eliminate sex bias, sex discrimination and sex stereotyping in vocational education as had HR 12835. The main differences were that the House bill contained references to homemakers, single heads of households, and women in traditionally female jobs, while the Senate bill did not deal with these matters. In addition, the Senate bill authorized monies for special project grants to assist in overcoming sex bias while the House bill did not address this subject. The Senate Committee Report explained the effect of each provision, but did not tell why each had been included.

On August 25, 1976, the Senate began consideration of the Education Amendments. Read into the Congressional Record was a statement from Stanley J. McFarland, a representative of the National Education Association, stating that the provisions to overcome sex discrimination and sex stereotyping in vocational education were of utmost importance.¹⁸ Although Senators Taft and Beall specifically mentioned provisions in the bill on the elimination of sex stereotyping and sex discrimination in vocational education, no one said anything in favor or in opposition to these provisions. The Senate version of the bill passed on August 27, 1976.

The following is a summary of the agreements by a House-Senate conference committee concerning the provisions to eliminate sex bias, sex discrimination, and sex stereotyping in vocational education:

STATEMENT OF PURPOSE:

Senate - authorizes programs of vocational education to overcome sex discrimination and sex stereotyping.

¹⁷ Ibid., p. H4209, Tuesday, May 11, 1976.

¹⁸ Ibid., p. S 14575, August 25, 1976.

House - vocational training is to be available to persons of all ages regardless of sex, race, religion, or national origin.

House amendment - States are to use their federal funds to develop and carry out vocational education programs so as to overcome sex discrimination and sex stereotyping in those programs.

Compromise - develop and carry out such programs of vocational education within each State so as to overcome sex discrimination and sex stereotyping in vocational education programs (including programs of homemaking), and thereby furnish equal opportunities in vocational education to persons of both sexes.

OFFICE OF WOMEN:

Senate - authorizes an annual appropriation of \$5.1 million for fiscal year 1978 through fiscal year 1982 to enable states to establish or designate an office for women which shall assist the state board in fulfilling the purpose of the Act by: creating awareness of programs designed to reduce sex stereotyping in vocational education; gathering, analyzing, and disseminating data on the status of men or women students and employees; developing and supporting actions to correct problems; reviewing the distribution of grants; monitoring the implementation of laws prohibiting sex discrimination; and developing an annual report of the status of women in vocational education. From the funds appropriated, each state in which such an office has been established shall receive \$100,000.

House - no position.

Compromise - States shall assign such full-time personnel as may be necessary to assist the State board in fulfilling the purposes of this Act by: creating awareness of programs designed to reduce sex stereotyping in vocational education; gathering, analyzing, and disseminating data on the status of men and women students and employees; developing and supporting actions to correct problems; reviewing the distribution of grants; monitoring the implementation of laws prohibiting sex discrimination; reviewing and submitting recommendations for the annual program plan and report; assisting local educational agencies and other interested parties in improving vocational education opportunities for women; and, making available information developed pursuant to this subsection. From the funds appropriated to carry out subpart 2, each State shall reserve \$50,000 in each fiscal year to carry out this subsection.

STATE ADVISORY COUNCILS:

Senate - Governor shall insure that there is appropriate representation of both sexes.

House - representation to include women with backgrounds familiar with sex discrimination.

Compromise - representation to include women with backgrounds familiar with sex discrimination in employment and in job training, and sex stereotyping in vocational education.

STATE PLAN:

Senate - no position.

House - requires the State to set out its policies and proposed actions to overcome sex discrimination and sex stereotyping.

Compromise - State will assure equal access to vocational education programs by both women and men, including actions to be taken to overcome sex discrimination and sex stereotyping, incentives to encourage the enrollment of both women and men in nontraditional courses of study, and the development of model programs to reduce sex stereotyping in all occupations.

APPROVAL OF STATE PLAN

Senate - approval only after State's Office for Women has reviewed the plan.

House - no position.

Compromise - no approval until the Commissioner has received assurances that the personnel assigned to review programs to assure equal access by both men and women have reviewed the plan or program plan and report.

VOCATIONAL GUIDANCE AND COUNSELING

Senate - provide training of counselors in changing work patterns of women and ways of overcoming sex stereotyping.

House - no position.

Compromise - provide training for the changing work patterns of women; explore ways of effectively overcoming occupational sex stereotyping, and ways of assisting girls and women in selecting careers solely on their occupational needs; and to develop improved career counseling materials, which are free.

BLOCK GRANT

Senate - no provision.

House - consolidates all categorical programs into a single block grant which includes authorization to: develop instructional materials to do away with sex stereotyping, provide vocational education for displaced homemakers, provide support services for women, and provide day-care services.

Compromise - block grants may be used to support full-time personnel to perform duties under section 104(b); for support services for women; for day-care services; and for vocational education for displaced homemakers.

CONSUMER AND HOMEMAKING

Senate - no provision.

House - encourages programs to lead to the elimination of sex stereotyping by promoting the development of curriculum materials responsive to appropriate State and Federal laws relating to equal opportunity in education and employment.

Compromise - encourages participation of both males and females in consumer and homemaking programs; development of curriculum materials in accordance with this objective; preparation of both males and females for the work of the home.

GRANTS TO ASSIST IN OVERCOMING SEX BIAS

Senate - authorizes \$5 million annually through fiscal 1982 to pay 75 percent of the cost of activities which show promise of overcoming sex stereotyping and bias in vocational education.

House - no position.

Compromise - authority falls under basic grant.

NATIONAL ADVISORY COUNCIL

Senate - adds individuals familiar with the special experiences and problems of women to this council.

House - adds women with experiences in sex discrimination to this council.

Compromise - adds to this council women with backgrounds and experiences in employment and training programs, who are knowledgeable about problems of sex discrimination in training and in employment.

STUDIES

House - requires the Commissioner of Education to conduct a study on the extent to which sex discrimination and sex stereotyping are being eliminated in programs assisted under the Act.

Senate - no position.

Compromise - requires the Commissioner of Education to conduct a study on the extent to which sex discrimination and sex stereotyping are being eliminated in programs assisted under the Act.

On September 28, 1976, the Senate agreed to the conference report and on September 29, the House agreed to the conference report. On October 1, 1976, the measure was presented to the President, and on October 12 it became Public Law 94-482.

PUBLIC LAW 94-482

THE EDUCATIONAL AMENDMENTS OF 1976

Title II -- Vocational Education

- I. PURPOSE. Statement of purpose for authorization of Federal grants to States, including the purpose of overcoming sex discrimination and stereotyping in vocational education, Section 101 (3):

It is also the purpose of this part to authorize Federal grants to States to assist them--

To develop and carry out such programs of vocational education within each State so as to overcome sex discrimination and sex stereotyping in vocational education programs (including programs of homemaking), and thereby furnish equal educational opportunities in vocational education to persons of both sexes.

Regulation #104.2 (3):

Purpose.

To develop and carry out such programs of vocational education within each State so as to overcome sex discrimination and sex stereotyping in vocational education programs (including programs of homemaking) and thereby furnish equal educational opportunities in vocational education to persons of both sexes.

- II. STATE PERSONNEL. Assignment of full-time personnel by participating States to assist in fulfilling the purposes of the Act (Section 104(b)(1)), functions of personnel A-I, funding (2):

"(1) Any State desiring to participate in the programs authorized by this Act shall also assign such full-time personnel as may be necessary to assist the State board in fulfilling the purposes of this Act by--

"(A) taking such action as may be necessary to create awareness of programs and activities in vocational education that are designed to reduce sex stereotyping in all vocational education programs;

(B) gathering, analyzing, and disseminating data on the status of men and women students and employees in the vocational education programs of that State;

(C) developing and supporting actions to correct any problems brought to the attention of such personnel through activities carried out under clause (B) of this sentence;

(D) reviewing the distribution of grants by the State Board to assure that the interests and needs of women are addressed in the projects assisted under this Act;

(E) reviewing all vocational education programs in the State for sex bias;

"(F) monitoring the implementation of laws prohibiting sex discrimination in all hiring, firing, and promotion procedures within the State relating to vocational education;

"(G) reviewing and submitting recommendations with respect to the overcoming of sex stereotyping and sex bias in vocational education programs for the annual program plan and report;

"(H) assisting local educational agencies and other interested parties in the State in improving vocational education opportunities for women; and

"(I) making readily available to the State Board, the State and National Advisory Councils on Vocational Education, the State Commission on the Status of Women, the Commissioner and the general public, information developed pursuant to this subsection."

"(2) From the funds appropriated to carry out subpart 2, each State shall reserve \$50,000 in each fiscal year to carry out this subsection.

Regulations #104.72 (a)(1)(2)(b); #104.73, definitions; #104.74, funding; #104.75, functions:

104.72 Selection of full-time personnel to eliminate sex discrimination and sex stereotyping.

(a) A State desiring to participate in the programs authorized by the Act shall select personnel to work full time to assist the State Board in fulfilling the purposes of the Act concerned with:

(1) Furnishing equal educational opportunities in vocational education programs to persons of both sexes; and

(2) Eliminating sex discrimination and sex stereotyping from all vocational education programs.

(b) In selecting the full-time professional personnel, the State shall match the qualifications of the applicants with the responsibilities of the job.

104.73 Definitions. The following definitions apply for the purposes of 104.72 through 104.76 and throughout the Act and regulations.

(a) "Sex bias" means behaviors resulting from the assumption that one sex is superior to the other.

(b) "Sex stereotyping" means attributing behaviors, abilities, interests, values, and roles to a person or group of persons on the basis of their sex.

(c) "Sex discrimination" means any action which limits or denies a person or a group of persons opportunities, privileges, roles, or rewards on the basis of their sex.

104.74 Funds for full-time personnel and functions.

(a) Each State shall expend not less than \$50,000 in each fiscal year from funds available under basic grants (section 120 of the Act) to support the personnel working full time to carry out the functions set forth in 104.75.

104.75 Functions of full-time personnel. Personnel designated under 104.72 shall work full time to:

- (a) Take action necessary to create awareness of programs and activities in vocational education designed to reduce sex bias and sex stereotyping in all vocational education programs, including assisting the State Board in publicizing the public hearings on the State plan in accordance with 104.165(a);
- (b) Gather, analyze, and disseminate data on the status of men and women students and employees in vocational education programs of the State;
- (c) Develop and support actions to correct problems brought to the attention of this personnel through activities carried out under paragraph (b) and 104.76, including creating awareness of the Title IX complaint process;
- (d) Review the distribution of grants and contracts by the State Board to assure that the interests and needs of women are addressed in all projects assisted under this Act;
- (e) Review all vocational education programs (including work-study programs, cooperative vocational education programs, apprenticeship programs, and the placement of students who have successfully completed vocational education programs) in the State for sex bias;
- (f) Monitor the implementation of laws prohibiting sex discrimination in all hiring, firing, and promotion procedures within the State relating to vocational education;
- (g) Assist local educational agencies and other interested parties in the State in improving vocational education opportunities for women; and
- (h) Make available to the State Board, the State Advisory Council, the National Advisory Council on Vocational Education, the State Commission on the Status of Women, the Commissioner, and the general public, including individuals and organizations in the State concerned about sex bias in vocational education, information developed under this section;
- (i) Review of the self-evaluations required by Title IX; and
- (j) Review and submit recommendations with respect to overcoming sex bias and sex stereotyping in vocational education programs for the five-year State plan and its annual program plan prior to their submission to the Commissioner for approval.

III. STATE ADVISORY COUNCIL. State Advisory Council make-up, Section 105(a)(2)(17):

"Section 105(a)(2). Each State Advisory Council shall have as a majority of its members persons who are not educators or administrators in the field of education and shall include as members one or more individuals who--

"(17) are women with backgrounds and experiences in employment and training programs, and who are knowledgeable with respect to the special experiences and problems of sex discrimination in job train

and employment and of sex stereotyping in vocational education, including women who are members of minority groups and who have in addition to such backgrounds and experiences, special knowledge of the problems of discrimination in job training and employment against women who are members of such groups;

. . . Governor or the State Board of Education . . . shall insure that there is appropriate representation of both sexes

Regulation #104.92(a)(17): special considerations (b)(3): function of council, #104.93(c):

104.92 Membership

(a) Required representation. The membership of the State Advisory Council shall include one or more individuals who:

(17) Are women with backgrounds and experiences in employment and training programs, and who are knowledgeable with respect to the special experiences and problems of sex discrimination in job training, and employment, and of sex stereotyping in vocational education, including women who are members of minority groups having special knowledge of the problems of discrimination in job training and employment against women in minority groups;

(b) Special considerations. The appointing authority, pursuant to paragraph (a) of this section, shall insure that:

(3) There is appropriate representation of both sexes, racial and ethnic minorities, and the various geographic regions of the State. The Commissioner considers the term "appropriate representation" to be representation which generally reflects the percentage of women or minorities in the population of the State or the percentage of women or minorities in the work force of the State.

IV. FIVE YEAR STATE PLAN. The five year State plan, Section 107(b)(4):

"Section 107

"(b) The five year State plans shall be submitted to the Commissioner by July 1st preceding the beginning of the first fiscal year for which such plan is to take effect and shall--

"(4)(A) set forth policies and procedures which the State will follow so as to assure equal access to vocational education programs by both women and men including--

"(i) a detailed description of such policies and procedures,

"(ii) actions to be taken to overcome sex discrimination and sex stereotyping in all State and local vocational education programs, and

"(iii) incentives, to be provided to eligible recipients so that such recipients will--

"(I) encourage the enrollment of both women and men in nontraditional courses of study, and

"(II) develop model programs to reduce sex stereotyping in all occupations; and

(B) set forth a program to assess and meet the needs of persons described in section 120(b)(1)(L) which shall provide for (i) special courses for such persons in learning how to seek employment, and (ii) placement services for such graduates of vocational education programs and courses; and

"Section 109(a)(3)(B)

"(B) In carrying out the provisions of this subsection, the Commissioner shall not approve a State plan or annual program plan and report until he has received assurances that the personnel assigned to review programs within the State to assure equal access by both men and women under the provisions of section 104(b) have been afforded the opportunity to review the plan or program plan and report.

Regulation #104.92(a)(17): special considerations (b)(3): function of council, #104.93(c):

104.92 Membership

(a) Required representation. The membership of the State Advisory Council shall include one or more individuals who:

(17) Are women with backgrounds and experiences in employment and training programs, and who are knowledgeable with respect to the special experiences and problems of sex discrimination in job training, and employment, and of sex stereotyping in vocational education, including women who are members of minority groups having special knowledge of the problems of discrimination in job training and employment against women in minority groups;

(b) Special considerations. The appointing authority, pursuant to paragraph (a) of this section, shall insure that:

(3) There is appropriate representation of both sexes, racial and ethnic minorities, and the various geographic regions of the State. The Commissioner considers the term "appropriate representation" to be representation which generally reflects the percentage of women or minorities in the population of the State or the percentage of women or minorities in the work force of the State.

Regulation #104.171(g); 104.187; 104.261(d); 104.262(e); 104.402(d)(1):

104.171 Certification of Plans

As used in this section, the term "plans" refers to the five-year State plan and the annual program plan and the accountability report. The plans submitted shall include, as attachments, the following certifications: . . .

(g) Certification by full-time personnel of opportunity to review programs within the State to assure equal access to vocational education by both men and women shall certify that the opportunity to review the plan has been afforded.

104.187 Policies for eradicating sex discrimination.

(a) The five-year State plan shall set forth a detailed description of policies and procedures which the State will follow to assure equal access to vocational education programs by both women and men. This description shall include:

(1) Actions to be taken to overcome sex discrimination and sex stereotyping in all State and local vocational education programs;

(2) Incentives adopted by the State for eligible recipients to:

(i) Encourage the enrollment of both women and men in nontraditional courses of study; and

(ii) Develop model programs to reduce sex bias and sex stereotyping in training for and placement in all occupations.

(b) The five-year State plan shall set forth a program to assess and meet the needs of persons described in 104.621. This program shall include:

(1) Special courses for these persons to learn how to seek employment; and

(2) Placement services for these persons once they complete the vocational education program.

104.261 Conditions for approval of five-year State plan.

The Commissioner will not approve a five-year State plan until the Commissioner:

(d) Has received assurances that the full-time personnel assigned to review programs within the State to assure equal access by both men and women have been afforded the opportunity to review the five-year State plan;

104.262 Conditions for approval of annual program plan and accountability report.

The Commissioner will not approve an annual program plan and accountability report until the Commissioner:

(e) Has received assurances that the full-time personnel assigned to review programs within the State to assure equal access by both men and women have been afforded the opportunity to review the annual program plan and accountability report;

104.402 Evaluation by State Board.

The State Board shall, during the five-year period of the State plan, evaluate in quantitative terms the effectiveness of each formally organized program or project supported by Federal, State, and local funds. These evaluations shall be in terms of:

(d) The results of additional services, as measured by the suggested criteria under paragraphs (a), (b), and (c) of this section, that the State provides under the Act to these special populations:

- (1) Women;
- (2) Members of minority groups;
- (3) Handicapped persons;
- (4) Disadvantaged persons; and
- (5) Persons of limited English-speaking ability.

V. USE OF FUNDS. Authorization of grants and uses of funds, Section 120(b)(1)(F) (J)(K)(L):

Note: F -- full-time personnel

J -- support services for women in nontraditional jobs;
counseling
job development

K -- day care for children

L -- vocational education for displaced homemakers

"Section 120 (b)(1) Grants to States under this subpart may be used, in accordance with five-year State plans and annual program plans approved pursuant to section 109, for the following purposes:

"(F) support of full-time personnel to perform the duties described in section 104(b);

"(J) support services for women who enter programs designed to prepare individuals for employment in jobs which have been traditionally limited to men, including counseling as to the nature of such programs and the difficulties which may be encountered by women in such programs, and job development and job follow-up services;

"(K) day care services for children of students in secondary and post-secondary vocational education programs;

"(L) vocational education for--

"(i) persons who had solely been homemakers but who now, because of dissolution of marriage, must seek employment;

"(ii) persons who are single heads of households and who lack adequate job skills;

"(iii) persons who are currently homemakers and part-time workers but who wish to secure a full-time job; and

"(iv) women who are now in jobs which have been traditionally considered jobs for females and who wish to seek employment in job areas which have not been traditionally considered job areas for females, and men who are now in jobs which have been traditionally considered jobs for males and who wish to seek employment in job areas which have not been traditionally considered job areas for males."

Regulations #104.501(a); 104.502(c)(9)(10); expanded support services for women, 104.601; 104.602, 104.603, 104.611, 104.612, 104.621, 104.622:

104.501 Authorization of grants.

A State shall use its basic grant, which is equal to 80 percent of the funds allotted pursuant to section 102(a) of the Act, for the purposes set forth in 104.502.

104.502 Use of funds under the basic grant.

(c) The State may use the balance of the funds available under the basic grant (section 120 of the Act), in accordance with the approved five-year State plan and annual program plan, for any of the following purposes:

(9) Support services for women, described in 104.611;

(10) Day care services for children of students in secondary and postsecondary vocational education programs, described in 104.611.

Support Services for Women

104.601 Use of funds.

A State may use funds under its basic grant (section 120 of the Act), when included in its approved five-year State plan and annual program plan, for support services for women who enter vocational education programs designed to prepare individuals for employment in jobs which have been traditionally limited to men.

104.602 Types of support services.

Support services to be provided under 104.601 include:

(a) Counseling. Counseling women entering and enrolled in non-traditional programs on the nature of these programs and on the ways of overcoming the difficulties which may be encountered by women in these programs. Counselors may furnish supportive services to assist students in adjusting to the new employment requirements.

(b) Job development. Programs and activities in the area of job development include the provision of materials and information concerning the world of work which present women students entering, enrolled in, or interested in nontraditional programs, the options, opportunities, and range of jobs available in these nontraditional fields. Job development support services may also be carried out through bringing persons employed in these nontraditional fields into the schools, as well as providing opportunities for women students to visit the workplace of business and industry so as to afford them a clear understanding of the nature of the work, including an understanding of the work setting in which these jobs are performed.

(c) Job follow-up support. Support services may be provided to assist women students in finding employment relevant to their training and interests. Follow-up services may be provided to assist students in the work force, and dealing with barriers which women face in working in these nontraditional areas.

104.603 Support to increase number of women instructors.

In funding programs and activities of support services for women, funds may be used to increase the number of women instructors involved in the training of individuals in programs which have traditionally enrolled mostly males, so as to provide supportive examples for these women who are preparing for jobs in these nontraditional areas of employment.

Day Care Services for Children of Students

104.611 Use of funds.

A State may use funds under its basic grant (section 120 of the Act), when included in the approved five-year State plan and annual program plan, to provide day care services for children of students (both male and female and including single parents) in secondary and post-secondary vocational education programs.

104.612 Day care services.

(a) Day care services shall be for the purpose of providing appropriate care and protection of infants, pre-school and school-age children in order to afford students who are parents the opportunity to participate in vocational education programs.

(b) The day care services provided under this section shall be governed by the Federal Interagency Day Care Requirements (45 CFR Part 71).

Vocational Education Programs for Displaced Homemakers and Other Special Groups

104.621 Use of funds.

A State shall use funds under its basic grant (section 120 of the Act) in accordance with its approved five-year State plan and annual program plan to provide vocational education programs for the following special groups:

(a) Persons who had been homemakers but who now, because of dissolution of marriage, must seek employment;

(b) Persons who are single heads of households and who lack adequate job skills;

(c) Persons who are currently homemakers and part-time workers but who wish to secure a full-time job; and

(d) Women who are now in jobs which have been traditionally considered jobs for females and who wish to seek employment in job areas which have not been traditionally considered jobs for males and who wish to seek employment in job areas which have not been traditionally considered as job areas for males.

104.622 Scope of programs.

The State shall fund programs, in accordance with the policies and procedures described in its approved five-year State plan pursuant to 104.187(b), to assess and meet the needs of the groups described in 104.621. These programs shall include:

(a) Organized educational programs necessary to prepare these special groups for employment, including the acquisition, maintenance and repair of instructional equipment;

(b) Special courses preparing these individuals in how to seek employment; and

(c) Provision of placement service for the graduate of these programs.

VI. PROGRAM IMPROVEMENT; EXEMPLARY AND INNOVATIVE PROGRAMS. Funds available to States for program improvement, Section 131(a)(2)(3)(5); State funds for contracts for exemplary and innovative programs, Section 132(b).

"Section 131. (a) Funds available to the States under section 130(a) may be used for support of State research coordination units and for contracts by those units pursuant to comprehensive plans of program improvement involving--

"(2) experimental, developmental, and pilot programs and projects designed to test the effectiveness of research findings, including programs and projects to overcome problems of sex bias and sex stereotyping;

"(3) improved curriculum materials for presently funded programs in vocational education and new curriculum materials for new and emerging job fields, including a review and revision of any curricula developed under this section to insure that such curricula do not reflect stereotypes based on sex, race, or national origin;

"(5) dissemination of the results of the contracts made pursuant to paragraphs (1) through (4), including employment of persons to act as disseminators, on a local level, of these results.

"Section 132. (b) Every contract made by a State for the purpose of funding exemplary and innovative projects shall give priority to programs and projects designed to reduce sex stereotyping in vocational education and shall, to the extent consistent with the number of students enrolled in nonprofit private schools in the area to be served whose educational needs are of the type which the program or project involved is to meet, provide for the participation of such students; and such contract shall also provide that the Federal funds will not be commingled with State or local funds."

Regulations #104.705(b)(c), research; 104.706(b)(1)(2):

104.706 Use of funds for research programs.

A research coordinating unit may use funds available under section 130 of the Act directly or by contract for:

(b) Experimental, developmental, and pilot programs and projects designed to test the effectiveness of research findings, including programs and projects to overcome problems of sex bias and sex stereotyping.

(c) Improved curriculum materials for presently funded programs in vocational education and new curriculum materials for new and emerging job fields, including a review and revision of any curricula developed under this section to insure that such curricula do not reflect stereotypes based on sex, race, or national origin.

104.706 Use of funds for exemplary and innovative programs.

(b) Every contract made by a research coordinating unit for the purpose of funding exemplary and innovative projects shall:

(1) Give priority to programs and projects designed to reduce sex bias and sex stereotyping in vocational education;

- (2) To the extent consistent with the number of students enrolled in private nonprofit schools in the area to be served, whose educational needs are of the type which the program is designed to meet, make provision (in accordance with the requirements set forth in 104.533) for the participation of these students in the programs.

VII. CURRICULUM DEVELOPMENT TO OVERCOME SEX BIAS AND STEREOTYPING. State funds for contracts to support curriculum development projects, Section 133(a)(2) (specifically to overcome sex bias and stereotyping in educational, counseling and testing materials):

"Section 133(a). Funds available to the States under section 130(a) may be used for contracts for the support of curriculum development projects, including--

"(2) the development of curriculum and guidance and testing materials designed to overcome sex bias in vocational education programs, and support services designed to enable teachers to meet the needs of individuals enrolled in vocational education programs traditionally limited to members of the opposite sex.

Regulation #104.708(c)(d):

104.708 Use of funds for curriculum development programs.
The research coordinating unit may use funds available under section 130 of the Act directly or by contract for:

(c) Development and dissemination of curriculum and guidance and testing materials designed to overcome sex bias and sex stereotyping in vocational education programs;

(d) Support services designed to enable teachers to meet the needs of individuals enrolled in vocational education programs traditionally limited to members of the opposite sex.

VIII. VOCATIONAL GUIDANCE AND COUNSELING. Vocational guidance and counseling, Section 134(a), funding; Section 134(a)(4)(A)(B)(C), counselor training:

"Section 134. (a) Not less than 20 per centum of the funds available to the States under section 130(a) shall be used to support programs for vocational development guidance and counseling programs and services which, subject to the provisions of subsection (b), shall include--

"(4) vocational guidance and counseling training designed to acquaint guidance counselors with (A) the changing work patterns of women, (B) ways of effectively overcoming occupational sex stereotyping, and (C) ways of assisting girls and women in selecting careers solely on their occupational needs and interests, and to develop improved career materials which are free.

Regulations #104.762; 104.763(d)(g):

104.762 Conformity with five-year State plan.

(a) A State shall use not less than 20 percent of the Federal funds available under section 130 of the Act to support vocational development guidance and counseling programs, services, and activities.

(b) The expenditure of funds for this purpose shall be in accordance with the approved five-year State plan and annual program plan.

104.763 Kinds of programs, services, and activities.

Funds made available to a State under the vocational guidance and counseling program (section 134 of the Act) shall be used to support one or more of the following activities:

(d) Vocational guidance and counseling training designed to acquaint guidance counselors with (1) the changing work patterns of women, (2) ways of effectively overcoming occupational sex stereotyping, and (3) ways of assisting girls and women in selecting careers solely on their occupational needs and interests, and to develop improved career counseling materials which are free;

(g) Establishment of vocational resource centers to meet the special needs of out-of-school individuals, including individuals seeking second careers, individuals entering the job market late in life, handicapped individuals, individuals from economically depressed communities or areas, and early retirees.

IX. TRAINING FOR VOCATIONAL EDUCATION PERSONNEL. State funds for training of vocational education personnel, Section 135(a)(2), inservice to overcome sex bias, etc.:

"Section 135. (a) Funds available to the States under section 130(a) may be used to support programs or projects designed to improve the qualifications of persons serving or preparing to serve in vocational education programs, including teachers, administrators, supervisors, and vocational guidance and counseling personnel, including programs or projects--

"(2) which provide in-service training for vocational education teachers and other staff members, to improve the quality of instruction, supervision, and administration of vocational education programs, and to overcome sex bias in vocational education programs.

Regulation #104.774(b):

104.774 Types of training.

Funds available to the State under section 130 of the Act may be used to support programs and projects designed to improve the qualifications of persons who are eligible under 104.773, including (but not limited to) the following:

(b) In-service training for vocational education teachers and other staff members, to improve the quality of instruction, supervision, and administration of vocational education programs, and to overcome sex bias and sex stereotyping in vocational education programs.

X. CONSUMER AND HOMEMAKING EDUCATION. Grants to States for consumer and homemaking education, Section 150(b)(A)(B)(C):

"Section 150. (b) Grants to States under this subpart may be used, in accordance with five-year State plans and annual program plans approved pursuant to section 109, solely for (1) educational programs in consumer and homemaking education consisting of instructional programs, services, and activities at all educational levels for the occupations of homemaking including but not limited to, consumer education, food and nutrition, family living and parenthood education, child development and guidance, housing and home management (including resource management), and clothing and textiles which (A) encourage participation of both males and females to prepare for combining the roles of homemakers and wage earners; (B) encourage elimination of sex stereotyping in consumer and homemaking education by promoting the development of curriculum materials which deal (i) with increased numbers of women working outside the home, and increased numbers of men assuming homemaking responsibilities and the changing career patterns for women and men and (ii) with appropriate Federal and State laws relating to equal opportunity in education and employment; (E) prepare males and females who have entered or are preparing to enter the work of the home.

Regulation #104.904(a)(b)(1)(2)(3)(4)(e):

104.904 Purpose of programs in consumer and homemaking education. A State shall set forth in the five-year State plan and annual program plan the programs in consumer and homemaking education which it intends to support. Funds available under section 150 of the Act shall only be provided to support educational programs in consumer and homemaking education which:

- (a) Encourage participation of both males and females to prepare for combining the roles of homemakers and wage earners;
- (b) Encourage elimination of sex stereotyping by promoting the development of curriculum materials which deal with:
 - (1) Increased numbers of women working outside the home;
 - (2) Increased numbers of men assuming homemaking responsibilities;
 - (3) Changing career patterns of men and women; and
 - (4) Appropriate Federal and State laws relating to equal opportunity in education and employment;
- (e) Prepare males and females who have entered or are preparing to enter into the work of the home.

XI. NATIONAL ADVISORY COUNCIL MEMBERSHIP. Establishment of National Advisory Council with female membership insured, Section 162(a)(6):

"Section 162. (a) The National Advisory Council on Vocational Education, established pursuant to section 104(a) of the Vocational Education Act of 1963, in effect prior to the enactment of the Education Amendments of 1976, shall continue to exist during the period for which appropriations are authorized under this Act. Individuals who are members of the Council on the date of the enactment of this Act may continue to serve for the terms for which they were appointed. Members appointed to succeed such individuals shall be appointed by the President for terms of three years. The Council shall consist of twenty-one members, each of whom shall be designated as representing one of the categories set forth in the following sentence. The National Advisory Council shall include individuals--

"(6) who are women with backgrounds and experiences in employment and training programs, who are knowledgeable with respect to problems of sex discrimination in job training and in employment, including women who are members of minority groups and who have, in addition to such backgrounds and experiences, special knowledge of the problems of discrimination in job training and employment against women who are members of such groups;"

In appointing the National Advisory Council, the President shall insure that there is appropriate representation of both sexes, racial and ethnic minorities, and the various geographic regions of the country.

XII. GRANT AUTHORIZATION. Authorization of grants and uses of funds, section 130 (b)(6):

"Section 130. (b) Grants to States under this subpart may be used, in accordance with five-year State plans, and annual program plans approved pursuant to section 109, for the following purposes:

"(6) grants to overcome sex bias as described in section 136."

Regulations #104.791; 104.792; 104.793:

Grants to Overcome Sex Bias and Sex Stereotyping
104.791 Purpose.

The purpose of grants under 104.792 is to support activities which show promise of overcoming sex bias and sex stereotyping in vocational education.

104.792 Conformity with five-year State plan.

(a) A State may use funds available under section 130 of the Act to support grants to overcome sex bias and sex stereotyping in vocational education programs.

(b) The expenditure of funds for this purpose shall be in accordance with the approved five-year State plan and annual program plan. The plans shall describe the types of projects to be funded.

104.793 Types of projects.

Funds may be used for projects such as:

- (a) Research projects on ways to overcome sex bias and sex stereotyping in vocational education programs;
- (b) Development of curriculum materials free of sex stereotyping;
- (c) Development of criteria for use in determining whether curriculum materials are free from sex stereotyping;
- (d) Examination of current curriculum materials to assure that they are free of sex stereotyping; and
- (e) Training to acquaint guidance counselors, administrators, and teachers with ways of effectively overcoming sex bias and sex stereotyping, especially in assisting persons in selecting careers according to their interests and occupational needs rather than according to stereotypes.

XIII. NATIONAL PROGRAMS. Programs of national significance, section 171(a)(1):

"Section 171. (a) Funds reserved to the Commissioner under section 103 for programs under this part shall be used primarily for contracts, and in some cases for grants, for--

"(1) activities authorized by sections 131, 132, 133, 134, 135, and 136, if such activities are deemed to be of national significance by the Commissioner . . .

Regulations #105.104(a)(6); 105.110(h)(4)(K):

105.104 Authorized activities.

(a) The Commissioner will support projects of national significance for improvement of vocational education. The projects include the following activities as authorized in sections 131 through 136 of the Act:

- (6) Grants to assist in overcoming sex bias and sex stereotyping (section 136 of the Act).

105.110 Technical review criteria.

The following criteria will be used in reviewing applications. These criteria are consistent with 45 CFR 100a.26, Review of Applications, in the General Provisions for Office of Education Programs. A segment or segments of an application should address each criterion. Each criterion is weighted and includes the maximum score that can be given to an application in relation to the criterion. The maximum score for the criteria is 100 points, and the maximum weight for each criterion is listed below. Applications that receive less than 50 points will not be funded.

(h) Staff competencies and experience. (Maximum 7 points.)
The application clearly describes:

(4) Use of professional staff members from minorities or women.

(k) Sex bias and stereotyping. (Maximum 8 points.) The application provides appropriate plans to eliminate sex bias and stereotyping in the proposed results, end products, and outcomes, and the proposed dissemination plans.

XIII. STUDY OF SEX DISCRIMINATION AND STEREOTYPING IN VOCATIONAL EDUCATION.

Studies of Vocational Education; Section 523--Requires Commissioner of Education to study extent to which sex discrimination and stereotyping have been eliminated under the Vocational Education Act of 1963, Comprehensive Employment and Training Act of 1973 and the Education Amendments of 1972.

Studies of Vocational Education

Section 523. (a) The Commissioner of Education shall carry out a study of the extent to which sex discrimination and sex stereotyping exist in all vocational education programs assisted under the Vocational Education Act of 1963, and of the progress that has been made to reduce or eliminate such discrimination and stereotyping in such programs and in the occupations for which such programs prepare students. The Commissioner shall report the results of such study, together with any recommendations with respect thereto, to the Congress within two years after the date of the enactment of this Act.

(b)(1) In addition to the other authorities, responsibilities, and duties conferred upon the National Institute of Education (hereinafter in this section referred to as the "Institute") by section 405 of the General Education Provisions Act, as amended by this Act, the Institute shall undertake a thorough evaluation and study of vocational education programs, including such programs conducted by the States, and such programs conducted under the Vocational Education Act of 1963 and other related programs conducted under the Comprehensive Employment and Training Act of 1973 and by the State Post-Secondary Commissions authorized by the Education Amendments of 1972. Such a study shall include--

(A) a study of the distribution of vocational education funds in terms of services, occupations, target populations, enrollments, and educational and governmental levels and what such distribution should be in order to meet the greatest human resource needs for the next 10 years;

(B) an examination of how to achieve compliance with, and enforcement of, the provisions of applicable laws of the United States;

(C) an analysis of the means of assessing program quality and effectiveness;

(D) depending on the level of funding available to the Institute, not more than three experimental studies to be administered by

the Institute, in cases where the Institute determines that such experimental programs are necessary to carry out the purpose of clauses (A) through (C) and the Commissioner of Education and the Secretary of Labor are authorized, notwithstanding any provision of any other law, at the request of the Institute, to approve the use of grants which educational or other agencies are eligible to receive under such Acts (in cases where such agencies agree to the uses of such grants), in order to carry out such experimental programs;

(E) fundings and recommendations, including recommendations for changes in such Acts or for new legislation, with respect to the matters studied under clauses (A) through (E); and

(F) a review and evaluation of the effectiveness of programs funded under subpart 5 of part A of the Vocational Education Act of 1963 (as such Act is in effect on October 1, 1977), and to make recommendations for the redirection and the improvement of programs at all levels under such subpart.

(2) The Institute shall make an interim report to the President and to the Congress not later than September 30, 1979, and shall make a final report to the President and to the Congress no later than September 30, 1980, on the result of its study conducted under this section, except that the report required pursuant to paragraph (1) (F) shall be transmitted to the President and the Congress not later than January 15, 1979. Any other provision of law, rule, or regulation to the contrary notwithstanding, such reports shall not be submitted to any review outside of the Institute before their transmittal to the Congress, but the President and the Commissioner may make to the Congress such recommendations with respect to the content of the reports as each may deem appropriate.

(3) Sums made available pursuant to section 102 of the Vocational Education Act of 1963 (as such Act is in effect on the date of the enactment of this Act) and sections 102 and 103 of the Vocational Education Act of 1963 (as such Act is in effect on October 1, 1977) shall be available to carry out the administrative and direct cost requirements of the provisions of this section. These funds shall not exceed \$1,000,000 per year for each of the fiscal years ending prior to October 1, 1979. Ten per centum of the funds made available under this section shall be made available for purposes of carrying out the provisions of paragraph (1)(F).

(4)(A) The Institute shall submit to the Congress, within 10 months after the date appropriations become available to carry out this section, a plan for the study to be conducted under this section. The Institute shall not commence such study until the first day after the close of the first period of 30 calendar days of continuous session of the Congress after the date of the delivery of such plan to the Congress.

(B) For purposes of subparagraph (A)--

(i) continuity of session is broken only by an adjournment of the Congress sine die; and

(ii) the days on which either House is not in session because of an adjournment of more than 30 days to a day certain are excluded in the computation of the 30-day period.

REFERENCES AND BIBLIOGRAPHY

REFERENCES AND BIBLIOGRAPHY

The following is organized by chapter, and for Chapter II, by topic. It contains both references for those works cited in the narrative, and in many cases, additional listings of works pertaining to the topic in question. Where a given source applies to more than one topic, it is repeated each time it is relevant. Thus, a thorough reference list is provided for each of the topics in Chapter II, and for the subjects of sex role socialization treated in Chapter III, and legislation related to sex equity in Chapter IV.

Chapter II

Topic 1

The challenge ahead: Equal opportunity in referral unions. United States Commission on Civil Rights, May 1976.

Cohen, J., & Frankel, S. M. Data analysis report: An assessment of school Supervised work education programs. Washington, D.C.: Department of Health, Education, and Welfare; U.S. Office of Education; Office of Planning, Budgeting, and Evaluation; September 1973.

Connecticut master plan for vocational and career education (Final Report): New directions in secondary education. Connecticut: State Board of Education, April 1976.

Development Associates, Inc. A study to determine the impact of the ARC Vocational Education Program. Appalachian Regional Commission, July 1974.

Dicesare, C. B. Changes in the occupational structure of U.S. jobs. Monthly Labor Review, March 1975, 98(3), 24-34.

Eckland, B. K., & Bailey, J. P., Jr. National longitudinal study of the high school class of 1972: A capsule description of the second follow-up survey data, October, 1974. Washington, D.C.: U.S. Department of Health, Education, and Welfare, Education Division, 1977.

Fetters, W. B. National longitudinal study of the high school class of 1972 student questionnaire and test results by sex, high school program, ethnic category and father's education. National Center for Educational Statistics, 1975.

Cannon, M. J. A profile of the temporary help industry and its workers. Monthly Labor Review, May 1974, 97(5), 44-49.

- Garfinkle, S. H. Occupations of women and black workers, 1962-74. Monthly Labor Review, November 1975, 98(11), 25-35.
- Grant, W. V., & Lind, C. Digest of education statistics, 1975 Edition. National Center for Educational Statistics, 1976.
- Green, G. P. Employment data for detailed occupations, 1974. Employment and Earnings, June 1975, pp. 6-8.
- Grossman, A. S. Women in the labor force: The early years. Monthly Labor Review, November 1975, pp. 3-9.
- Handbook of women workers. Washington, D.C.: U.S. Department of Labor, 1976.
- Hedges, J. N., & Bemis, S. E. Sex stereotyping: Its decline in the skilled trades. Monthly Labor Review, May 1974, 97(5), 14-22.
- Johnson, D., & Moser, C. (eds.). Essays on the public employment program in rural areas. Washington, D.C.: U.S. Department of Labor, October 1973.
- Kane, R., Fernandez, D., Chen, L., & Godoff, J. M. A model to retrain women teachers and skilled women as teachers in nontraditional vocational programs. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education; Bureau of Occupational and Adult Education; June 1977.
- Klein, D. P. Women in the labor force: The middle years. Monthly Labor Review, November 1975, pp. 10-16.
- Maret-Havens, E. Developing an index to measure female labor force attachment. Monthly Labor Review, May 1977, 100(5), 35-37.
- McEaddy, B. J. Women in the labor force: The later years. Monthly Labor Review, November 1975, pp. 17-24.
- McMillan, K. A. Minorities and women in private industry--1975. An analysis of EEO-1 employment. U.S. Equal Employment Opportunity Commission, 1977.
- Osso, N. Vocational education: Characteristics of students and staff, 1972. Washington, D.C.: U.S. Government Printing Offices, 1974.
- Parnes, H. S. & Nestel, G. Factors in career and occupational status. Dual Careers: Vol. 4, R&D Monograph 21. Washington, D.C.: U.S. Department of Labor, 1976.
- The Research Triangle Institute. National longitudinal study of the high school class of 1972: A capsule description of first follow-up survey data. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Education Division, 1976.
- Schiller, B., et al. The impact of WIN II: A longitudinal evaluation of the work incentive program. Washington, D.C.: U.S. Department of Labor, September 1976.

- Schneider, P. J. A statistical portrait of women in the U.S. Washington, D.C.: U.S. Department of Commerce, Bureau of the Census, April 1976.
- Smith, R. E. Sources of growth of the female labor force 1971-75. Monthly Labor Review, August 1977, 100(8), 27-28.
- Steele, M. Women in vocational education (Project Baseline Supplemental Report). Arizona: Northern Arizona University, October 1974.
- Steiger, J. & Cooper, S. The vocational preparation of women, 1975. Report and Recommendation of the Secretary's Advisory Committee on the Rights and Responsibilities of Women. Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1975.
- Survey and Marketing Services, Inc. A study of perceived career barriers to women in government. Honolulu: Hawaii State Department of Personnel Services, January 1976.
- Udell, J. G., Parke, E. L., & Strong, W. A. Skilled labor in the Milwaukee area. Wisconsin: Office of Research Publications, Graduate School of Business, University of Wisconsin, Madison, July 1977.
- U.S. Department of Labor, Bureau of Labor Statistics. Employment and earnings. January 1978, 25(1), 153-154; 160-161.
- U.S. Department of Labor. Bureau of Labor Statistics. U.S. working women: A databook, 1977.
- U.S. Department of Labor, Employment and training report of the President. Washington, D.C.: U.S. Government Printing Office, 1977.
- Waldman, E., & McEaddy, B. J. Where women work--An analysis by industry and occupation. Monthly Labor Review, May 1974, 97(5), 3-13.
- Wallace, P. (ed.). Equal employment opportunity and the AT&T case. Massachusetts: The MIT Press, 1976.
- Wilms, W. Public and proprietary vocational training: A study of effectiveness. Berkeley: Center for Research and Development in Higher Education, University of California, 1974.
- WIN in '76, seventh annual report to the Congress on employment and training under Title IV of the Social Security Act. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Department of Labor, November 1976.

INTERVIEW

- Carrol, G. U.S. Department of Labor, Women's Bureau, September 2, 1977.

Topic 2

- Blau, F. D. Pay differentials and differences in the distribution of employment of male and female office workers. Cambridge, Massachusetts: Harvard University, 1975.
- Breglio, V. J., et al. An assessment of school supervised work education programs, Part II: Urban cooperative work education programs and follow-up study: Final report - vol. 2. Work education program outcomes--a 24 month follow-up study. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education; Office of Planning, Budgeting, and Evaluation, March 1976.
- The challenge ahead: Equal opportunity in referral unions. Washington, D.C.: U.S. Commission on Civil Rights, May 1976.
- Cohen, A. J., & Frankel, S. M. Data analysis report: An assessment of school supervised work education programs. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education; Office of Planning, Budgeting, and Evaluation, September 1973.
- Cornblath, N. (ed.). Women who work outside the home. Women's Lobby Quarterly, October 1976, pp. 1-4.
- Development Associates, Inc. A study to determine the impact of the ARC vocational education program. Appalachian Regional Commission, July 1974.
- Fetters, W. B. National longitudinal study of the high school class of 1972. Comparative profiles one and one-half years after graduation. National Center for Education Statistics, 1975b.
- Fuchs, V. R. Women's Earnings: Recent trends and long-run prospects. Monthly Labor Review, May 1974, 97(5), 23-26.
- Grossman, A. S. Women in the labor force: The early years. Monthly Labor Review, November 1975, 3-9.
- Healy, R. & Lund, D. Chapter 622, Massachusetts law, women and vocational education. Washington, D.C.: National Institute of Education, September 1975.
- Hedges, J. N., & Bemis, S. E. Sex stereotyping: Its decline in the skilled trades. Monthly Labor Review, May 1974, 97(5), 14-22.
- Jucenius, C. L., & Shortlidge, R. L., Jr. Dual careers: A longitudinal study of the market experience of women. Washington, D.C.: U.S. Department of Labor, Manpower Administration. (Manpower Research Monograph, 1975, 3[21].)
- Jucenius, C. L. Dual Careers: The influence of work experience and typicality of occupational assignment on women's earnings. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Department of Labor, 1976. (R & D Monograph, 4[21]).
- Klein, D. P. Women in the labor force: The middle years. Monthly Labor Review, November 1975, pp. 10-16.

- Lecht, L. A. Evaluating vocational education: Policies and plans for the 1970s. New York: Praeger Publishers, 1974.
- McEaddy, B. J. Women in the labor force: The later years. Monthly Labor Review, November 1975, pp. 17-24.
- McMillan, K. A. Minorities and women in private industry--1975. An analysis of EEO-1 employment. U.S. Equal Employment Opportunity Commission, 1977.
- Niemi, A. W., Jr. Sexist earnings differences: The cost of female sexuality. The American Journal of Economics and Sociology, January 1977, 36(1), 33-40.
- Paines, H. S., et al. Dual careers. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Department of Labor; Employment Training Administration, 1976. (R & D Monograph, 4[21])
- Perry, R., et al. The Impact of government manpower programs. Pennsylvania: Industrial Research Unit, The Wharton School, University of Pennsylvania, 1975.
- Raphael, E. Working women and their membership in labor unions. Monthly Labor Review, May 1974, 97(5), pp. 27-33.
- Schiller, B., et al. The impact of WIN II: A longitudinal evaluation of the work incentive program. Washington, D.C.: U.S. Office of Policy Evaluation and Research, Department of Labor, September 1976.
- Sexton, P. C. Women and work. Washington, D.C.: U.S. Department of Labor; Employment and Training Administration, 1977. (R & D Monograph 46)
- Sommers, D. Occupational rankings for men and women by earnings. Monthly Labor Review, August 1974, 34-51.
- Steele, M. Women in vocational education. Flagstaff: Northern Arizona University, October 30, 1974. (Project Baseline Supplemental Report)
- Steiger, J. M., & Cooper, S. The vocational preparation of women, 1975. (HEW - Report and Recommendations of the Secretary's Advisory Committee on the Rights and Responsibilities of Women, 1975.) Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1975.
- Survey and Marketing Services, Inc. A study of perceived career barriers to women in government. Honolulu: Hawaii State Department of Personnel Services, January 1976.
- U.S. Department of Commerce, Bureau of the Census. A statistical portrait of women in the U.S. Washington, D.C.: Author, April 1976.
- U.S. Department of Labor. Employment and training report of the President. Washington, D.C.: U.S. Government Printing Office, 1977.
- U.S. Department of Labor, Bureau of Labor Statistics. U.S. working women: A databook. Washington, D.C.: Author, 1977.

- Waldman, E., & McEaddy, B. J. Where women work--An analysis by industry and occupation. Monthly Labor Review, May 1974, 97(5), 3-13.
- Walsh, J., & Breglio, V. J. An assessment of school supervised work education programs - Part II: Urban cooperative work education programs and follow-up study. Final report. Vol. I: Overview of thirty urban cooperative education programs. Washington, D.C.: U.S. Office of Education; Office of Planning, Budgeting, and Evaluation, March 1976.
- Walsh, J., & Totten, J. An assessment of vocational education programs for the disadvantaged under part B and part A section 102(b) of the 1968 Amendments to the Vocational Education Act. Final report: December 1976. Washington, D.C.: U.S. Office of Education; Office of Planning, Budget, and Evaluation, December 1976.
- Wilms, W. W. Public and proprietary vocational training: A study of effectiveness. Berkeley: Center for Research and Development in Higher Education, University of California, 1974.
- "WIN in '76," seventh annual report to the Congress on employment and training under Title IV of the Social Security Act. Washington, D.C.: Department of Labor, November 18, 1976.

Topic 3

- Fetters, W. B. National longitudinal study of the high school class of 1972. Washington, D.C.: U.S. Department of Health, Education, and Welfare; National Center for Education Statistics, 1975a.
- Healy, R., & Lund, D. Chapter 622, Massachusetts law, women and vocational education. Washington National Institute of Education, September 1975.
- Kane, R., Frazee, P., & Dee, E. A study of the factors influencing the participation of women in nontraditional occupations in postsecondary area vocational training schools. Washington, D.C.: U.S. Office of Education; Bureau of Occupational and Adult Education, November 1976.
- Kay, E. Enrollments and programs in noncollegiate postsecondary schools 1973-74. Washington, D.C.: U.S. Department of Health, Education, and Welfare; National Center for Education Statistics, 1976.
- Lewis, M. V., & Kaltreider, L. W., et al. Attempts to overcome sex stereotyping in vocational education: A study of women enrolled in traditional male vocational programs in eleven secondary schools. Institute for Research on Human Resources, Pennsylvania State University, November 1976.
- New York State Advisory Council on Vocational Education. Occupational status of women in New York. Summer 1977.
- Osso, N. Vocational education: Characteristics of students and staff, 1972. National Center for Educational Statistics, 1974.
- State Board of Education. Connecticut Master Plan for Vocational and Career Education (Final Report): New directions in secondary education. Connecticut: Author, April 1976.
- Thompson, B. W. National longitudinal study of the high school class of 1972, volumes I and II. Washington, D.C.: U.S. Government Printing Office, 1974.
- U.S. Office of Civil Rights. Survey of area vocational-technical schools-- Program summary by race and sex. Washington, D.C.: Author, Department of Health, Education, and Welfare, 1974.
- U.S. Office of Education. Comparative analysis of vocational education enrollment by sex in fiscal years 1972 and 1975. Washington, D.C.: Author, Bureau of Occupational and Adult Education, Department of Health, Education, and Welfare.
- U.S. Office of Education. Statistics on vocational education enrollments. Unpublished, Bureau of Occupational and Adult Education, Department of Health, Education, and Welfare, 1976.

Walsh, J. J., Breglio, V., & Langlois, J. L. An assessment of vocational education programs for the handicapped under Part B of the 1968 Amendments to the Vocational Education Act. Washington, D.C.: U.S. Office of Education, Department of Health, Education, and Welfare, October 1974.

Walsh, J., & Totten, J. L. An assessment of vocational education programs for the disadvantaged under Part B and Part A section 102(6) of the 1968 Amendments to the Vocational Education Act Final Report. Washington, D.C.: Office of Planning, Budget, and Evaluation, December 1976.

INTERVIEW

Duis, H. Program Support Branch, Division of Vocational and Technical Education; Bureau of Occupational and Adult Education (OE/DHEW), 1977.

Topic 4

- Breglio, V. J., Stevens, M., & Tobias, J. An assessment of school supervised work education programs--Part II: Urban cooperative work education programs and follow-up study. Final report vol. I: Overview of thirty urban cooperative education programs. Washington, D.C.: U.S. Office of Education; Office of Planning, Budgeting, and Evaluation, March 1976.
- Butler, T., & Hobbie, R. Employment and training programs. Washington, D.C.: Congressional Budget Office, Human Resources and Community Development Division, May 1976.
- Cohen, A. J., & Frankel, S. M. Data analysis report: An assessment of school supervised work education programs. Washington, D.C.: U.S. Office of Education; Office of Planning, Budgeting, Evaluation, September 1973. (Systems Development Corporation Contract OEC-0-72-5024)
- Fetters, W. B. National longitudinal study of the high school class of 1972. Washington, D.C.: U.S. Department of Health, Education, and Welfare; National Center for Education Statistics, 1975a.
- Prager, A., & Goldberg, J. National program for selected population segments. Project summaries Contract no. 20-25-77-20, AAI No. 77-62. Washington, D.C.: U.S. Department of Labor; Employment and Training Administration, July 1977.
- Schiller, B., Miller, D., Cameron, W., Tempe, M., & Hall, D. The impact of WIN II--A longitudinal evaluation of the work incentive program. Washington, D.C.: U.S. Department of Labor, Office of Policy Evaluation and Research, September 1976.
- SNAPS User's Manual - State and National Apprenticeship System. Washington, D.C.: U.S. Department of Labor; Division of Reporting Operations, Office of Administration and Management, (n.d.).
- Thompson, B. W. National longitudinal study of the high school class of 1972. (Vols. 1 & 2.) Washington, D.C.: U.S. Government Printing Office, 1974.
- Usery, W. J., Jr. Employment and training report of the President. Washington, D.C.: U.S. Government Printing Office, 1977.
- Walsh, J., & Breglio, V.J. An assessment of school supervised work education programs - Part II: Urban cooperative work education programs and follow-up study. Final report vol. I: Overview of thirty urban cooperative education programs. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Planning, Budgeting, and Evaluation, March 1976.
- Walsh, J., & Totten, J. An assessment of vocational education programs for the disadvantaged under Part B and Part A Section 102(b) of the 1968 Amendments to the Vocational Education Act. Final report: December 1976. Washington, D.C. U.S. Department of Health Education, and Welfare; Office of Planning, Budget, and Evaluation, Office of Education, December 1976.

WIN in '76, Seventh annual report to the Congress on employment and training under Title IV of the Social Security Act. Washington, D.C.: U.S. Department of Labor, November 1976.

INTERVIEWS

Marshall, J. Employment Training and Administration, Department of Labor, October 3, 1977.

Dyson, R. Division of Reporting Operations, Office of Administration and Management, Employment Training Administration, Department of Labor, August 25, 1977.

Wilkensen, P. Job Works, Division of Plan and Programs, Office of Civilian Conservation, August 15, 1977.

Connel, B. Office of National Programs, Indian and Native Programs, October 4, 1977.

Gulledge, J. Job Corps, Division of Technical Assistance, April 1977.

Topic 5

Development Associates, Inc. A study to determine the impact of the ARC Vocational Education Program. Appalachian Regional Commission, Contract #74-75-CO-2694-73, July 1974.

Eckland, B. K., & Bailey, J. P., Jr. National longitudinal study of the high school class of 1972: A capsule description of second follow up survey data. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education, 1977.

Perry, C. R., Anderson, B., Rowan, R. L., Northrup, H. R., et al. The impact of government manpower programs. Pennsylvania: Industrial Research Unit, The Wharton School, University of Pennsylvania, 1975.

INTERVIEW

Dyson, R. Division of Reporting Operations, Office of Information Systems, Office of Administration and Management, ETA, Department of Labor, August 1977.

Topic 6

Hedges, J. N., & Bemis, S. E. Sex stereotyping: Its decline in the skilled trades. Monthly Labor Review, May 1974, 97(5), pp. 14-22.

Steele, M. Women in vocational education: Project baseline supplemental report. Flagstaff: Northern Arizona University, 1974.

Topic 7

- Fetters, W. B. National longitudinal study of the high school class of 1972. Comparative profiles one and one-half years after graduation. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education, 1975b.
- Fetters, W. B. National longitudinal study of the high school class of 1972. Changes in attitudes one and one-half years after graduation. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education, 1975.
- Lewis, M. V., Kaltreider, L. W., et al. Attempts to overcome sex stereotyping in vocational education: A study of women enrolled in traditional male vocational programs in eleven secondary schools. Washington, D.C.: U.S. Office of Health, Education, and Welfare; Office of Education, November 1976.
- Walsh, J., & Breglio, V. J. An assessment of school supervised work education programs--Part II: Urban cooperative work education programs and follow-up study. Final report vol. I: Overview of thirty urban cooperative education programs. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education; Office of Planning, Budgeting, and Evaluation, March 1976.
- Breglio, V. J., et al. An assessment of school sponsored work education programs--Part II: Urban cooperative work education programs and follow-up study. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education; Office of Planning, Budgeting, and Evaluation, March 1976.
- Wilms, W. W. Public and proprietary vocational training: A study of effectiveness. Berkeley Center for Research and Development in Higher Education, University of California, Berkeley, 1974.

Topic 8

- Astin, H., Harway, M., & McNamara, P. Sex discrimination in Education: Access to postsecondary education. Washington, D.C.: Department of Health, Education, and Welfare, February 1976.
- Barnett, R. C., & Baruch, G. Occupational and educational aspirations and expectations: A review of empirical literature. Washington, D.C.: National Institute of Education, 1974.
- Creech, R., et al. Comparative analysis of postsecondary occupational and educational outcomes for the high school class of 1972. Washington, D.C.: Department of Health, Education, and Welfare; Office of Education, 1974.
- Edingbone, E. D., Pettibone, T. J., & Heldt, J. E. Educational, occupational, and residence aspirations and expectations for rural and minority youth in New Mexico. Washington, D.C.: Department of Health, Education, and Welfare; Office of Education; December 1975.
- Fetters, W. B. National longitudinal study of the high school class of 1972: Comparative profiles one and one-half years after graduation. Washington, D.C.: Department of Health, Education, and Welfare; Office of Education, 1975.
- Fetters, W. B. National longitudinal study of the high school class of 1972: School questionnaire and test results by sex, high school program, ethnic category, and father's education. Washington, D.C.: Department of Health, Education, and Welfare; Office of Education, 1975b.
- Hedges, J. N., & Bemis, S. E. Sex stereotyping: Its decline in the skilled trades. Monthly Labor Review, May 1974, 97(5), 14-22.
- Jusenius, C. L., & Sandell, S. H. Barriers to entry and re-entry into the labor force. Washington, D.C.: Women's Bureau; U.S. Department of Labor, June 1974.
- Thompson, B. W. National longitudinal study of the high school class of 1972 (Vols. 1 and 2). Washington, D.C.: U.S. Government Printing Office, 1974.
- Walshok, M. L. The perceived benefits of paid employment to women in working class jobs. Washington, D.C.: National Institute of Mental Health, February 1976a.
- Walshok, M. L. The significance of opportunity to the movement of women into nontraditional blue collar jobs. San Diego: University of California, San Diego Extension, August 1976b.

Topic 9

Development Associates, Inc. A study to determine the impact of the ARC Vocational Education Program. July 1974.

Fetters, W. B. National longitudinal study of the high school class of 1972: Student questionnaire and test results by sex, high school program, ethnic category, and father's education. Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1975a.

Lewis, M. U., Kaltreider, L. W., et al. Attempts to overcome sex stereotyping in vocational education: A study of women enrolled in traditionally male vocational programs in eleven secondary schools. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education, November 1976.

Thompson, B. W. National longitudinal study of the high school class of 1972, vols. I and II. Washington, D.C.: U.S. Government Printing Office, 1974.

Udell, J. G., Parke, E. L., & Strang, W. A. Skilled labor in the Milwaukee area. Madison: Office of Research Publications, Graduate School of Business, University of Wisconsin, July 1977.

Walsh, J., & Breglio, V. J. An assessment of school supervised work education programs. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education, March 1976.

Walsh, J., & Totten, J. L. An assessment of vocational education programs for disadvantaged under Part B and Part A Section 102(b) of 1968 Amendments to Vocational Education Act, Final Report. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education, December 1976.

Wilms, W. Public and proprietary vocational training: A study of effectiveness. Washington, D.C.: National Institute of Education, 1974.

Topic 10

Development Associates, Inc. A study to determine the impact of the ARC Vocational Education Program. Appalachian Regional Commission, July 1974.

Hedges, J. N., & Bemis, S.E. Sex stereotyping: Its decline in the skilled trades. Monthly Labor Review, May 1974, 97(5), 14-22.

Udell, J. G., Parke, E. L., & Strange, W. A. Skilled labor in the Milwaukee area. Madison: Office of Research Publications, Graduate School of Business, University of Wisconsin, July 1977.

Topic 11

Fink, A., & Kosecoff, J. Report of the field testing and validation of expanding career horizons. Illinois: Department of Adult Vocational and Technical Education; Illinois Office of Education, December 1976.

Eliason, C. Women in community and junior colleges. Washington, D.C.: American Association of Community and Junior Colleges, 1977.

Topic 12

Hedges, J. N., & Bemis, S. E. Sex stereotyping: Its decline in the skilled trades. Monthly Labor Review, May 1974, 97(5), 14-22.

Holthouse, R. J. Memorandum to Dr. Jesse L. Allen on H.E.W. report on Norfolk Technical Vocational Center. Norfolk, Virginia, February 1977.

Lerner, J., Bergstrom, F., & Champagne, J. E. Equal vocational education. Houston: Center for Human Resources, University of Houston, 1976.

Mendro, R. L., et al. Analysis of Title IX Self-Evaluation Questionnaire. Dallas, Texas: Dallas Independent School District, July 1976.

Niemi, A. W., Jr. Sexist earnings differences: The cost of female sexuality. The American Journal of Economics and Sociology, January 1977, 36(1), 33-40.

Raphael, E. E. Working women and their membership in labor unions. Monthly Labor Review, May 1974, 97(5), 27-33.

Smith, A. J. New pioneers. Raleigh: North Carolina Department of Public Instruction, January 1977.

Waldman, E., & McEaddy, B. J. Where women work--Analysis by industry and occupation. Monthly Labor Review, May 1974, 97(5), 3-13.

Topic 13

Healy, R., & Lurd, D. Chapter 622, Massachusetts Law, Women and vocational education. Washington, D.C.: National Institute of Education, September 1975.

Hedges, J. N., & Bemis, S. E. Sex stereotyping: Its decline in the skilled trades. Monthly Labor Review, May 1974, 97(5), 14-22.

Holthouse, R. J. Memo to Dr. Jesse L. Allen on H.E.W. report on Norfolk Technical Vocational Center. Norfolk, Virginia, February 1977.

Kane, R. D., Frazer, P., & Dee, E. A study of the factors influencing the participation of women in nontraditional occupations in postsecondary area vocational training schools. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education, November 1976.

Lewis, M. V., Kaltreider, L.W., et al. Attempts to overcome sex stereotyping in vocational education: A study of women enrolled in traditional male vocational programs in eleven secondary schools. Washington, D.C.: U.S. Department of Health, Education, and Welfare; Office of Education, November 1976.

Mendro, R. L., et al. Analysis of Title IX Self-Evaluation Questionnaire. Dallas: Dallas Independent School District, July 1976.

U.S. Department of Labor. Projects for special populations. Washington, D.C.: Author, 1977.

Topic 14

Allen, G. Occupational status of women in New York. New York: New York Advisory Council on Vocational Education, 1967.

Grant, W. V., & Lind, C. G. Digest of education statistics, 1975 edition. U.S. Department of Health, Education, and Welfare; Education Division, 1976.

HEW/OCR 1974 survey of area vocational-technical schools--Summary enrollment and staff data. Department of Health, Education, and Welfare; Office of Civil Rights, 1974.

Kane, R. D. Sex discrimination in education: Study of employment practices affecting professional personnel. Vol. 1: Study report. Department of Health, Education, and Welfare; National Center for Education Statistics Education Division, April 1976.

Kane, R., Fernandez, L. C., & Godoff, J. M. A model to retrain women teachers and skilled women as teachers in nontraditional vocational programs. U.S. Department of Health, Education, and Welfare; Office of Education; Bureau of Occupational and Adult Education, June 1977.

Kane, R. D., Frazee, P., & Dee, E. A study of the factors influencing the participation of women in nontraditional occupations in postsecondary area vocational training schools. (Vol. 1: Narrative Report; Vol. 2: Back-up Tables.) U.S. Department of Health, Education, and Welfare; Office of Education; Bureau of Occupational and Adult Education, November 1976.

Osso, N. A. Vocational education: Characteristics of students and staff, 1972. Washington, D.C.: Department of Health, Education, and Welfare; Office of Education, 1974.

Steele, M. Women in vocational education. (Project Baseline Supplemental Report.) Flagstaff: Northern Arizona University, October 1974.

Topic 15

McCune, S. Telephone Survey: Efforts of SEAs to comply with Title IX.
Resource Center on Sex Roles in Education, May 1976.

Title IX and the states: A report on state agency compliance. Based on a
survey by The Project on Equal Education Rights, NOW Legal Defense and
Education Fund, May 1976.

Aguiar, M. The PEER complaints: An annual assessment of OCR's performance.
Unpublished report, June 1977.

McClure, P. Title VI And Title IX compliance by the Office for Civil Rights
in state-operated special purpose and vocational schools. July 1976.

INTERVIEW

Holly Knox, Director, Project on Equal Education Rights, 1977

SAMPLE OF SELF-EVALUATIONS:

Title IX Self-Evaluation. Minnesota State Department of Education, November
1976.

Affirmative Action Plan, 1976-77. California, (n.d.).

Title IX Self-Evaluation. Maryland, July 1976.

State Education Agency Title IX Self-Evaluation. Connecticut, (n.d.).

Topic 16

A guide to compliance in area vocational education schools. Washington, D.C.:
U.S. Department of Health, Education, and Welfare; Office of Civil Rights,
1974.

Project on Equal Education Rights: Stalled at the start. Washington, D.C.:
NOW Legal Defense and Education Fund, 1977.

Southeastern Public Education Program. Almost as fairly. Atlanta, Georgia:
Author, American Friends Service Committee, 1977.

INTERVIEW

Simonson, J. National Advisory Council on Women's Educational Programs,
February 1978

Topic 17

Brown, L. Vocational education: Analyzing state five year plans for eliminating sex bias and sex stereotyping. The Federal Education Project Newsletter. Washington, D.C.: Lawyer's Committee on Civil Rights, July-August 1977.

Dykstra, A. Study of four groups of Colorado vocational educators' agreement toward the 1976 amendments. Unpublished doctoral dissertation, July 1977.

McClure, P., & Taylor, A. Letter to the Commissioner of Education, August 12, 1977. Washington, D.C.: NAACP Legal Defense and Education Fund.

Topic 18

Lerner, J., Bergstrom, F., & Champagne, J. E. Equal vocational education. Houston, Texas: Center for Human Resources, University of Houston, 1976.

Maher, S. M. Exemplary strategies for elimination of sex bias in vocational education programs. Washington, D.C.: National Advisory Council on Vocational Education, 1976.

Smith, A. New Pioneers: The North Carolina program to eliminate sex bias in occupational education. Raleigh: North Carolina Department of Public Instruction, January 1977.

Steiger, J. M., & Cooper, S. The vocational preparation of women. Washington, D.C.: Superintendent of Public Documents, 1975.

Steiger, J. M., & Syanton, E. Job training for low income women: The need for change. Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1976.

U.S. Department of Labor. Comprehensive employment and training act projects for special regulations, 1977.

CORRESPONDENCE

Jolley, M. A. Project FACET at Trident Technical College, Charleston, South Carolina, November 11, 1977.

Wider Opportunities for Women, December 13, 1977.

Chapter III

- Adams, B. N. The family: A sociological interpretation. Chicago: Rand McNally, 1975.
- Alper, T. G. Achievement motivation in college women: A now-you-see-it-now-you-don't phenomenon. American Psychologist, March 1974, 194-203.
- Angrist, S. S. Changes in women's work aspirations during college (or work does not equal career). International Journal of Sociology of the Family, March 1972, 87-97.
- Astin, H. S., & Bisconti, A. S. Career plans of college graduates of 1965 and 1970. Bethlehem, Pennsylvania: CPC Foundation, 1973.
- Astin, H. S., Parleman, A., & Fisher, A. Sex roles: A research bibliography. Washington, D.C.: U.S. Government Printing Office, 1975.
- Astin, H. S., Suniewick, N., & Diveck, S. Women: A bibliography on their education and careers. New York: Behavioral Publications, 1974.
- Baird, L. L. Cooling out and warming up in the junior college. Measurement and Evaluation in Guidance, 1971, 4(3), 160-171.
- Balswick, J., & Reck, C. W. The inexpressive male: A tragedy of American society. The Family Coordinator, October 1971, 363-368.
- Bardwick, J. M. (ed.). Readings on the psychology of women. New York: Harper and Row, 1972.
- Bardwick, J., & Douvan, E. Ambivalence: The socialization of women. In V. Gornick & B. K. Maran (eds.), Women in sexist society. New York: Signet, 1972.
- Barnett, R. C. The relationship between occupational prestige: A study of sex differences and age trends. Paper presented at the meeting of the American Psychological Association, Montreal, August 1973.
- Barnett, R. C., & Baruch, G. Occupational and educational aspirations and expectations: A review of empirical literature. Radcliffe Institute and Worcester Foundation for Experimental Biology, 1974.
- Barry, H., III, Bacon, M. K., & Child, I. I. A cross-cultural survey of some sex differences in socialization. Journal of Abnormal Social Psychology, 1957, 55, 327-332.
- Bem, S., and Bem, D. J. Training the woman to know her place: The social antecedents of women in the world of work. Harrisburg: Pennsylvania Department of Education, 1973.

- Bergman, J. Are little girls being harmed by "Sesame Street"? In J. Staucey, S. Berland, & J. Daniels (eds.), And Jill came tumbling after: Sexism in American education. New York: Dell Publishing Co., 1974.
- Bernard, J. Sex differences: An overview. New York: M.S.S. Modular Publications (Module 26), 1974.
- Beuf, A. Doctor, lawyer, household drudge. Journal of Communications, 1974, 24, 142-145.
- Bickner, M. L. Women at work: An annotated bibliography. Los Angeles: Manpower Research Center, Institute of Industrial Relations, 1974.
- Biller, H. B. Father absence and the personality development of the male child. Developmental Psychology, 1970, 2(2), 181-201.
- Birk, J. M. Reducing Sex Bias: Factors affecting the client's view of the use of career interest inventories. In E. Diamond (ed.), Issues of sex bias and sex fairness in career interest measurement. Washington, D.C.: U.S. Department of Health, Education, and Welfare; National Institute of Education, 1975.
- Birk, J. M., Cooper, J., & Tanney, M. F. Stereotyping in occupational outlook handbook illustrations: A follow-up study. Paper presented at Annual Meeting of the American Psychological Association, Chicago, 1975.
- Blau, F. D. Pay differentials and differences in the disorientation of employment of male and female office workers. Cambridge, Massachusetts: Harvard University, 1975.
- Blau, P. M., Gustad, J. W., Jessor, R., Parnes, H. S., & Wilcock, R. C. Occupational Choice: A conceptual framework. Industrial and Labor Relations Review, 1956, 9(4).
- Block, J., et al. Some personality concomitants and environmental antecedents. Journal of Consulting and Clinical Psychology, 1973, 41(3), 321-341.
- Breedlove, C. J., & Cicerelli, V. G. Women's fear of success in relation to personal characteristics and types of occupation. Journal of Psychology, 1974, 86 (2nd half), 181-190.
- Brim, O. G. Family structure and sex role learning by children: A further analysis of Helen Koch's data. Sociometry, 1958, 21, 7-15.
- Brophy, J. E., & Good, T. L. Teachers' communication of differential expectations for children's classroom performance: Some behavioral data. Journal of Educational Psychology, 1970, 61, 365-374.
- Brophy, J. E., & Good, T. L. Feminization of American elementary schools. Phi Delta Kappan, 1973, 54, 564-566.
- Brown, D. Students' vocational choices: A review and critique. Guidance Monograph Series, Series IV, 1970.

- Campbell, J. N., & Nadelman, L. Report #13. Unpublished manuscript, Developmental Program, Department of Psychology, University of Michigan, October 1972.
- Carmody, J. F., Fenske, R. H., & Scott, C. S. Changes in goals, plans and background characteristics of college-bound high school students. ACT Research Report 52. American College Testing Program, 1972.
- Casserly, P. L. An assessment of factors affecting female participation in advanced placement programs in mathematics, chemistry and physics. Report to the National Science Foundation, July 1975.
- Chasen, B. Sex role stereotyping and pre-kindergarten teachers. Elementary School Journal, 1974, 74(4), 220-235.
- Clark, E. T. Culturally disadvantaged boys' and girls' aspirations to and knowledge of white-collar and professional occupations. 1965. (ERIC Document 024697)
- Clark, E. T. Influence of sex and social class on occupational preference and perception. Personnel and Guidance Journal, 1967, 45, 440-444.
- Crandall, V. C., Katkowsky, W., & Crandall, V. J. Children's belief in their own control of reinforcement in intellectual-academic achievement situations. Child Development, 1965, 36(91), 91-190.
- De Fleur, M. L. Children's knowledge of occupational roles and prestige: Preliminary report. Psychological reports, 1963, 13, 760-761.
- Diamond, E. (ed.). Issues of sex bias and sex fairness in career interest measurement. Washington, D.C.: U.S. Department of Health, Education, and Welfare; National Institute of Education, (n.d.).
- Diamond, E. E. Minimizing sex bias in testing. Measurement and Evaluation in Guidance, 1976, 9(1), 28-34.
- Donlon, T. F. Content factors in sex differences on test questions. Paper presented at the meeting of the New England Educational Research Organization, Boston, June 1971.
- Donlon, T. F., Ekstrom, R., & Lockhead, M. Comparing the sexes on achievement items of varying content. Paper presented at the Annual Meeting of the American Psychological Association, Washington, D.C., 1976.
- Droppleman, L. F., & Schaefer, E. S. Boys' and girls' reports of maternal and paternal behavior. Journal of Abnormal and Social Psychology, 1963, 67, 648-654.
- Entwisle, D. R., & Greenberger, E. Adolescents' views of women's work role. American Journal of Orthopsychiatry, 1972, 42(4), 648-656.
- Ernest, J. Mathematics and sex. Santa Barbara: University of California, 1976.

- Fagot, B., & Patterson, G. R. An in vivo analysis of reinforcing contingencies for sex role behaviors in the pre-school child. Developmental Psychology, 1969, 1, 563, 568.
- Farmer, H. S., & Bohn, M. J., Jr. Home-career conflict reduction and the level of career interest in women. Journal of Counseling Psychology, 1970, 17, 228-232.
- Feminists on Children's Literature. A feminist look at children's books. School Library Journal, 1971, 17(5), 19-24.
- Fennema, E. Influences of selected cognitive, affective and educational variables on sex-related differences in mathematics learning and studying. Paper presented to Work and Study Group of National Institute of Education, U.S. Department of Health, Education, and Welfare, 1976.
- Flanagan, J. C. Project TALENT: Five years after high school and appendix II. Final report. Pittsburgh: University of Pittsburgh, American Institutes for Research, 1971. (Bureau No. BR-50606, Grant OEG-09-610065-1367[085])
- Fox, L. H. Facilitating the development of mathematical talent in young women. Unpublished doctoral dissertation, Johns Hopkins University, 1974.
- Fox, L. H. The effects of sex role socialization on mathematics participation and achievement. Paper prepared for Education and Work Group, National Institute of Education, U.S. Department of Health, Education, and Welfare, 1976.
- Frazier, N., & Sadker, M. Sexism in school and society. New York: Harper and Row, 1973.
- Freeman, J. How to discriminate against women without really trying. In J. Freeman (ed.), Women: A feminist perspective. Palo Alto, California: Mayfield, 1975.
- Garai, J. E., & Schienfeld, M. Sex differences in mental and behavioral traits. Genetic Psychology Monographs, 1968, 77, 169-299.
- Garrett, C. S., Cunningham, D. J., & Buelow, J. O. Effects of vicarious consequences and model and sex on imitative behavior in first grade children. Journal of Educational Psychology, 1974, 66(6), 940-947.
- Ginzberg, E. Toward a theory of occupational choice: A restatement. Vocational Guidance Quarterly, 1972, 20(3), 169-176.
- Ginzberg, E., Ginsberg, S. W., Axelrod, S., & Herma, J. L. Occupational choice: An approach to a general theory. New York: Columbia University Press, 1951.
- Goldberg, S., & Lewis, M. Play behavior in the year old infant: Early sex differences. Child Development, 1969, 40, 21-31.

- Good, T., Sikes, J., & Brophy, J. Effects of teacher sex and student sex on classroom interaction. Journal of Education Psychology, 1973, 65(1), 74-87.
- Gump, J. P., & Rivers, L. W. A consideration of role in efforts to end sex bias. In E. Diamond (ed.), Issues of sex bias and sex fairness in career interest measurement. Washington, D.C.: U.S. Department of Health, Education, and Welfare; National Institute of Education, 1975, 123-140.
- Handler, M. An analysis of sex role attributes, behaviors and occupations in contemporary children's picture books. Unpublished doctoral dissertation, New York University, 1976.
- Hanson, G. R., Prediger, D. J., & Schussel, R. H. The Development and Validation of sex-balanced interest inventory scales. Iowa City, Iowa: A.C.T. Publications, 1977.
- Harmon, L. A. Status of women in higher education, 1963-1972: A selected bibliography. Ames, Iowa: Iowa State University Library, 1972.
- Harmon, L. W. Strong vocational interest blank profiles of disadvantaged women. Journal of Counseling Psychology, 1970, 17(6), 519-521.
- Hartley, R. E. Children's concepts of male and female roles. Merrill-Palmer-Quarterly, 1960, 6, 83-91.
- Hartley, R. E., & Hardesty, F. P. Children's Perceptions of sex roles in childhood. Journal of Genetic Psychology, 1964, 104, 43-51.
- Hartley, R. E., Hardesty, F. P., and Gorfain, D. S. Children's perceptions and expressions of sex role preference. Child Development, 1962, 33, 221-227.
- Harway, M., Astin, H. S., Suhr, J. M., & Whiteley, J. M. Sex discrimination in counseling and guidance. Los Angeles, California: Higher Education Research Institute, 1976.
- Haven, E. W. Factors associated with the selection of advanced mathematics courses by girls in high school. Unpublished doctoral dissertation, University of Pennsylvania, 1971.
- Hawley, P. Perceptions of male models of femininity related to career choice. Journal of Counseling Psychology, 1972, 19(4), 308-313.
- Hedges, J. N., & Bemis, S. E. Sex stereotyping: Its decline in the skilled trades. Monthly Labor Review, 1974, 97(5), 14-22.
- Hess, R. A. Social class and ethnic influences on socialization. In P. H. Mussen (ed.), Carmichael's manual of child psychology. New York: Wiley, 1970, 2, 457-558.

- Hewitt, L. Age and sex differences in vocational aspirations of elementary school children. Journal of Social Psychology, 1975, 96, 173-177.
- Hochschild, A. R. A review of sex roles research. In J. Huber (ed.), Changing women in a changing society. Chicago: University of Chicago Press, 1973.
- Hoffman, L. W. Early childhood experiences and women's achievement motives. Journal of Social Issues, 1972, 28(2), 129-155.
- Hoffman, L. W. Fear of success in males and females, 1965-1971. Journal of Consulting and Clinical Psychology, 1974a, 42(2), 353-358.
- Hoffman, L. W. Effects of maternal employment on the child: A review of the research. Developmental Psychology, 1974b, 10(2), 204-228.
- Holland, J. L. Making vocational choices: A theory of careers. New Jersey: Prentice-Hall, 1973.
- Horner, J. T., Buterbaugh, J. C., & Carefoot, J. J. Factors relating to occupational and educational decision-making of rural youth. Research summary final report. University of Nebraska: College of Agriculture, 1967.
- Horner, M. Fail: Bright women. Psychology Today, 1969, 3(6), 36-41; 62.
- Horner, M. Femininity and successful achievement. A basic inconsistency. In Bardwick, Douvan, Horner, and Gutman, Feminine personality and conflict. Belmont, California: Brooks/Cole, 1970.
- Horner, M. Sex differences in achievement motivation and performance in competitive and non-competitive situations. Unpublished doctoral dissertation, University of Michigan, 1968.
- Horner, M. Toward an understanding of achievement-related conflicts in women. Journal of Social Issues, 1972, 28(2), 157-175.
- Iglitzen, L. B. A child's eye view of sex roles. Sex role stereotyping in the schools. Washington, D.C.: National Education Association, 1973, 23-30.
- Jackson, P., & Lahaderne, H. Inequalities of teacher-pupil contacts. Psychology in the Schools, July 1967, 204-211.
- Johannson, C. W., & Harmon, L. W. The SVIB: One form or two? Journal of Counseling Psychology, 1972, 19, 404-410.
- Kagan, J., Hoshen, B., & Watson, S. The child's symbolic perceptions of parental attributes. Child Development, 1961, 32, 625-636.
- Kane, R. D., Frazer, P., & Dee, E. A study of the factors influencing the participation of women in nontraditional occupations in postsecondary area vocational training schools. Vol. 1. Arlington, Virginia: R. J. Associates, Inc., 1976.

- Kanter, R. M. Some effects of proportions on group life: Skewed sex ratios and responses to token women. American Journal of Sociology, 1977, 82(5), 969-990.
- Karman, L. J. Women: Personal and environmental factors in career choice. Paper presented at the annual meeting of the Society for Research on Child Development, Philadelphia, Pennsylvania, March 1973.
- Kernkamp, E., & Price, E. Co-education may be a "no-no" for the six year old boy. Phi Delta Kappan, June 1972, 662-663.
- Kirchner, E. P., & Vondracek, S. I. What do you want to be when you grow up? Vocational choice in children aged three to six. Paper presented at meeting of The Society for Research on Child Development, Philadelphia, Pennsylvania, March 1973.
- Kohlberg, L. A cognitive-developmental analysis of children's sex role concepts and attitudes. In E. E. Maccoby (ed.), The development of sex differences. Stanford, California: Stanford University Press, 1966, 82-173.
- Kohn, M. Social class and parental authority. American Sociological Review, 1959, 24, 352-366.
- Komarovsky, M. Blue collar marriage. New York: Random House, 1962.
- Komarovsky, M. Cultural contradictions and sex roles. American Journal of Sociology, 1946, 52, 182-189.
- Komarovsky, M. Cultural contradictions and sex roles: The masculine case. In J. Huber (ed.), Changing women in a changing society. Chicago: University of Chicago Press, 1973.
- Krumboltz, J. D. A social learning theory of CDM. In A. Mitchell, G. B. Jones, & J. D. Krumboltz (eds.), A social learning theory of career decision making. Palo Alto, California: American Institutes for Research, 1975, 13-39.
- Ladner, J. Tomorrow's tomorrow: The black woman. Garden City, New York: Doubleday, 1971.
- Lakoff, R. Language and women's place. New York: Harper Colophon, 1975.
- Laws, J. S. Work aspirations of women: False leads and new starts. In M. Blaxall and B. Reagan (eds.), Women and the workplace. Chicago: University of Chicago Press, 1976, 33-49.
- Lee, P. C. The early classroom experience: Masculine or feminine? Perspectives on Education, 1973, VI, 10-15.
- Lee, P. C., & Wolinsky, A. L. Male teachers of young children: A preliminary empirical study. Young Child, 1973, 28, 342-352.

- Leifer, A. D., & Lesser, G. S. The development of career awareness in young children. Paper prepared for the Education and Work Group, National Institute of Education, 1976.
- Le Masters, E. E. Blue collar aristocrats. Madison: University of Wisconsin Press, 1975.
- Levine, A., & Crumoine, J. Women and the fear of success: A problem in replication. American Journal of Sociology, 1975, 80, 964-974.
- Levine, M. Identification of reasons why qualified women do not pursue mathematical careers. Report to the National Science Foundation, August 1976.
- Lewis, M. V., & Kaltreider, L. W. Attempts to overcome sex stereotyping in vocational education. University Park, Pennsylvania: Institute for Research on Human Resources, 1976.
- Lipman-Blumen, J. Vicarious achievement roles for women: A serious challenge for women. Personnel and Guidance Journal, 1975, 53(9), 650.
- Lipman-Blumen, J., & Leavitt, H. J. Vicarious and direct achievement patterns in adulthood. Counseling Psychologist, 1976, 6(1), 26-32.
- Lipman-Blumen, J., & Lickamy, A. Sex roles in transition: A 10 year perspective. In A. Inkilis (ed.), Annual Review of Sociology, Palo Alto, California: American Reviews, Inc., 1975, I, 297-337.
- Lippitt, R., & Gold, M. Classroom social structure as a mental health problem. Journal of Social Issues, 1959, 15(1), 40-49.
- Looft, W. R. Sex differences in the expression of vocational aspirations by elementary-school children. Developmental Psychology, 1971, 5, 361.
- Luchins, E. G. Women mathematicians: A contemporary appraisal. Paper presented at annual meeting of the American Association for the Advancement of Science, Boston, Massachusetts, 1976.
- Lynn, D. B. A note on sex differences in the development of masculine and feminine identification. Psychological Review, 1959, 66, 126-135.
- Lynn, D. B. The process of learning parental and sex role identification. Journal of Marriage and the Family, 1966, 28(4), 466-480.
- Lynn, D. B., and Sawrey, W. L. Sex differences in the personality development of Norwegian children. Journal of Genetic Psychology, 1962, 101, 367-374.
- Maccoby, E. (ed.). The development of sex differences. Stanford, California: Stanford University Press, 1966.
- Maccoby, E. E., & Feldman, S. S. Mother attachment and stranger reactions in the third year of life. Monograph of the Society for Research in Child Development, 1972, 37, 1-86.

- Maccoby, E. E., & Jacklin, C. N. The psychology of sex differences. Stanford, California: Stanford University Press, 1974.
- Macleod, J. S., & Silverman, S. T. You won't do. Pittsburgh: KNOW, Inc., 1973.
- McClelland, D. C., Atkinson, G. W., Clark, R. A., & Lowell, E. L. The achievement motive. New York: Appleton-Century-Crofts, 1953.
- Meyer, J. W., & Sobiezek, B. I. "The effect of sex on adult interpretation of child behavior." Developmental Psychology, 1972, 6, 42-48.
- Meyer, W. J., & Thompson, G. G. Teacher interaction with boys as contrasted with girls, (in) Sex differences in the distribution of teacher approval and disapproval among sixth grade children. Journal of Educational Psychology, 1956, 47, 385-397.
- Milton, G. A. Sex differences in problem-solving as a function of role appropriateness of the problem content. Psychological Reports, 1959, 5, 705-708.
- Minuchin, P. The schooling of tomorrow's women. The School Review, 1972, 80, 119-208.
- Mischel, W. A social learning view of sex differences in behavior. In E. E. Maccoby (ed.), The Development of sex differences. Stanford, University Press, 1966, 56-81.
- Mitchell, A. M. Analysis and synthesis of CDM literature as related to this theory. In A. M. Mitchell, G. B. Jones, and J. D. Krumboltz (eds.), A social learning theory of career decision making. Palo Alto, California: American Institutes for Research, 1975.
- Mitchell, A. M., G. B. Jones, and J. D. Krumboltz (eds.), A social learning theory of career decision making. Palo Alto, California: American Institutes for Research, 1975.
- Monahan, L., Kuhn, D., & Shaver, P. Intrapsychic versus cultural explanations of the "Fear of Success Motive." Journal of Personality and Social Psychology, 1974, 29(1), 60-64.
- Nelson, R. C. Knowledge and interests concerning 16 occupations among elementary and secondary school students. Educational and Psychological Measurement, 1963, 23, 741-754.
- Phelps, A. T., Farmer, H. S., & Backer, T. E. Bibliography on women at work. New York: Human Science Press, 1976.
- Psathas, G. Toward a theory of occupational choice for women. Sociology and Social Research, 1968, 52(2), 253-368.
- Rainwater, L., Coleman, R. P. & Handel, G. Working-man's wife. New York: MacFadden Books, 1959.

- Randall-Puryear, G., & Mednick, M. S. Black militancy, affective attachment, and the fear of success in black college women. Journal of Consulting and Clinical Psychology, 1975.
- Rehberg, R. A., and Sinclair, J. Adolescent achievement behavior, family authority structure, and parental socialization processes. American Journal of Sociology, 1970, 75(6), 1012-1034.
- Roby, P. Sociology and women in working class jobs. In R. M. Kanter & M. Millman (eds.), Another voice: Feminist perspectives on social life and social science. Garden City, New York: Anchor, 1975.
- Roby, P. Structural and internalized barriers to women in higher education. In C. Safilios-Rothschild (ed.), Toward a sociology of women. Lexington, Massachusetts: Xerox College Publishing, 1972.
- Roby, P. Toward full equality: More job education for women. The School Review, 1976.
- Roe, A. Psychology of occupations. New York: Harper and Brothers, 1957.
- Rosen, B., & Meixel, C. The chameleon syndrome: A social psychological dimension of the female sex role. Journal of Marriage and the Family, 1976, 38, 605-617.
- Rosenberg, B. G., & Sutton-Smith, B. Family interaction effects on masculinity-femininity. Journal of Personality and Social Psychology, 1968, 8(2), 117-120.
- Rosenthal, R., & Jacobson, L. Pygmalion in the classroom. New York: Holt, Rinehart and Winston, Inc., 1968.
- Rubin, J. Z., Provenzano, F. J., & Zella, L. The eye of the beholder: Parents' views on the sex of newborns. American Journal of Orthopsychiatry, 1974, 44(4), 512-519.
- Rubin, L. B. Worlds of pain: Life in the working class family. New York: Basic Books, 1976.
- Saario, T. N., Jacklin, C. N., & Tittle, C. H. Sex role stereotyping in the public schools. Harvard Educational Review, 1973, 43, 386-416.
- Sadker, M., & Sadker, D. Sexual discrimination in the elementary schools. The National Elementary Principal, 1972, 12, 41-45.
- Safilios-Rothschild, C., Polk, B., & Stein, R. Sex role socialization and sex differences. A review chapter in W. Fthenakis (ed.), Early child development. Munich: Institute for Early Socialization, 1975.
- Sawhill, I. V. The earnings gap: Research needs and issues. Paper presented at Workshop on Research Needed to Improve the Employment and Employability of Women, convened by the U.S. Department of Labor, Women's Bureau, June 1974.

- Schlossberg, N. K., & Goodman, J. A woman's place: Children's sex stereotypes of occupations. Vocational Guidance Quarterly, 1972, 20, 266-270.
- Schlossberg, N., & Pietrofesa, J. J. Perspectives on counselors' bias: Implications for counselor education. The Counseling Psychologist, 1974, 4(1), 44-54.
- Schneider, J. W., & Hacker, S. L. Sex role imagery and use of the generic "Man" in introductory texts: A case in the sociology of sociology. The American Sociologist, 1973, 8, 12-18.
- Sewell, W. H., and Shah, V. P. Parents' education and children's educational aspirations and achievements. American Sociological Review, 1968, 33(2), 191-209.
- Sewell, W. H., & Shah, V. P. Social class, parental encouragement, and educational aspirations. American Journal of Sociology, 1968, 73(5), 559-572.
- Sexton, P. C. How the American boy is feminized. Psychology Today, 3(8), 23-29; 66-67.
- Sexton, P. Women and work. Washington, D.C.: U.S. Department of Labor, Employment and Training Administration. (R & D Monograph 46)
- Sherman, J. Effects of biological factors on sex-related differences in mathematics achievement. Paper presented to U.S. Department of Health, Education, and Welfare; National Institute of Education; Work and Education Group.
- Siegel, C.L.F. Sex differences in the occupational choices of second graders. Journal of Vocational Behavior, 1973, 3, 15-19.
- Simmons, R., & Rosenberg, M. Functions of children's perceptions of the stratification system. American Sociological Review, 1971, 36, 235-249.
- Sommers, D. Occupational rankings for men and women by earnings. Monthly Labor Review, August 1974, 97(8).
- Steele, M. Women in vocational education. (Project Baseline supplemental report.) Flagstaff: Northern Arizona University, 1974.
- Steiger, J. M., & Cooper, S. The vocational preparation of women: Report and recommendations to the Secretary's Advisory Committee on the Rights and Responsibilities of Women. Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1975.
- Stein, A. H., & Bailey, M. M. The socialization of achievement orientation in females. Psychological Bulletin, 1973, 80, 345-346.
- Stein, A. H., et al. The influence of masculine, feminine and neutral tasks on children's achievement behavior, expectancies of success and attainment values. Child Development, 1971, 42(1), 195-207.

- Sternglanz, S. H., & Serbin, L. A. Sex role stereotyping in children's television programs. Developmental Psychology, 1974, 10(5), 710-715.
- Strainchamps, E. Our sexist language. In V. Gornick & B. Moran (eds.), Women in Sexist Society. New York: Signet Books, 1972, 347-361.
- Super, D. The psychology of careers. New York: Harper and Brothers, 1957.
- Sweet, J. A. Women in the labor force. New York: Seminar Press, 1973.
- Tangri, S. S. Determinants of occupation role innovation among college women. Journal of Social Issues, 1972, 28(2), 117-200.
- Thomas, A. H., & Steward, N. R. Counselor response to female clients with deviate and conforming career goals. Journal of Counseling Psychology, 1971, 18, 352-357.
- Tittle, C. K. Sex bias in educational measurement: Fact or fiction. Measurement and Evaluation in Guidance, 1974, 6(4), 219-226.
- Tittle, C. K., McCarthy, K., & Steckler, J. F. Women and educational testing. Princeton, New Jersey: Educational Testing Service, 1974.
- Tresemmer, D. Assumptions made about gender roles. In M. Millman & R. M. Kanter (eds.), Another voice. Garden City, New York: Anchor Books, 1975.
- Tresemmer, D. Fear of success: Popular but unproven. Psychology Today, March 1974, 8, 82-85.
- U'Ren, M. The image of women in textbooks. In V. Gorneck & B. Moran (eds.), Women in sexist society. New York: Signet Books, 1972.
- U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Occupational and Adult Education. Comparative analysis of vocational education enrollments by sex in 1972 and 1975. Washington, D.C.: Author, 1976a.
- U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of Occupational and Adult Education. Women in nontraditional occupations: A bibliography. Washington, D.C.: Author, 1976b.
- U.S. Department of Health, Education, and Welfare, Office of Education, Division of Vocational and Technical Education. Vocational and technical education, selected statistical tables, 1972. Washington, D.C.: Author, 1972.
- U.S. Department of Labor. Employment and training report of the President, 1976. Washington, D.C.: Author, 1976.
- U.S. Department of Labor, Manpower Administration. Manpower report of the President, 1974. Washington, D.C.: Author, 1974.

- U.S. Department of Labor, Women's Bureau, Employment Standards Administration. 1975 Handbook on women workers. (Bulletin #297.) Washington, D.C.: Author, 1975.
- Sener, A. M., & Snyder, C. A. The pre-school child's awareness and anticipation of adult sex roles. Sociometry, 1966, 29, 159-168.
- Waldman, E., & McEaddy, B. J. Where women work--An analysis by industry and occupation. Monthly Labor Review, May 1974, 97(5).
- Walshok, M. L. The perceived benefits of paid employment to women in working class jobs. Paper presented at annual meeting of American Association for the Advancement of Science, 1976.
- Weitzman, L. Sex role socialization. In J. Freeman (ed.), Women: A feminist perspective. Palo Alto, California: Mayfield, 1975.
- Weitzman, L., Eifler, D., Hokada, E., & Ross, C. Sex role socialization in picture books for preschool children. American Journal of Sociology, 1972, 77(6), 1125-1150.
- Weitzman, L., & Rizzo, D. Images of males and females in elementary school textbooks. New York: National Organization for Women's Legal Defense and Education Fund, 1974.
- Werts, C. E. Sex differences in college attendance. National Merit Scholarship Corporation Research Reports, 1966, 2(6).
- Westervelt, E. M., & Fixler, D. A. Women's higher and continuing education: An annotated bibliography with selected references on related aspects of women's lives. New York: College Entrance Examination Board, 1971.
- Wilms, W. W. Public and proprietary vocational training. Berkeley, California: Center for Research and Development in Higher Education, 1974.
- Women on Words and Images. Dick and Jane as victims. Princeton, New Jersey: Author, 1972.
- Women on Words and Images. Channeling children: Sex stereotyping in prime-time TV. Princeton, New Jersey: Author, 1975.
- Zytowski, D. G. Toward a theory of career development for women. Personnel and Guidance Journal, 1969, 47, 660-664.

Chapter IV

- Comptroller General of the United States. Report to the Congress. What is the role of federal assistance for vocational education? Washington, D.C.: December 1974. (MWD 75-31)
- Steiger, J. M., & Cooper, S. Vocational preparation of women (A report of the Secretary's Advisory Committee on the Rights and Responsibilities of Women). Washington, D.C.: Department of Health, Education, and Welfare, U.S. Government Printing Office, 1975.
- U.S. Congress. Congressional Record (Vol. 121. November 3, 1975, May 10, 1976; May 11, 1976; August 25, 1976). Washington, D.C.: U.S. Government Printing Office.
- U.S. Congress, House, Subcommittee on Elementary, Secondary, and Vocational Education of the Committee on Education and Labor. Sex discrimination and sex stereotyping in vocational education (Hearing, 94th Congress, Second Session; March 17 and April 21, 28, 1975). Washington, D.C.: U.S. Government Printing Office.
- U.S. Congress, House, General Subcommittee on Education of the Committee on Education and Labor. Vocational education amendments of 1974 (94th Congress, First Session; May until August, 1974). Washington, D.C.: U.S. Government Printing Office.
- U.S. Congress, House, Subcommittee on Elementary, Secondary, and Vocational Education of the Committee on Education and Labor. Vocational and occupational education, Vols I, II, and III (94th Congress, Second Session; February 1975 through March 1976). Washington, D.C.: U.S. Government Printing Office.
- U.S. Congress, House, Committee on Education and Labor. The vocational education and National Institute of Education amendments of 1976 (to accompany HR 12835) (Committee Report 94-1085). Washington, D.C.: U.S. Government Printing Office, May 1976.
- U.S. Congress, House. Education amendments (Conference Report 94-1701). Washington, D.C.: U.S. Government Printing Office, September 1976.
- U.S. Congress, House, Subcommittee on Equal Opportunities of the Committee on Education and Labor, Hearings. Women's Educational Equity Act. Washington, D.C.: U.S. Government Printing Office, July 25, 26, and September 12, 13, 1973.
- U.S. Congress, Senate, Subcommittee on Education of the Committee on Labor and Public Welfare. Women's Educational Equity Act of 1973. Washington, D.C.: U.S. Government Printing Office, Hearings October 17 and November 9, 1973.
- Women in 1975. Washington, D.C.: Citizen's Advisory Council on the Status of Women, 1975.